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THE  
JOURNAL  
OF THE  
Arkansas MEDICAL  
SOCIETY

June, 1979

Vol. 76 No. 1

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BUSINESS OFFICE

Post Office Box 1208 Fort Smith, Ark. 72902  
C. C. LONG, M.D., Business Manager

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NEWS—Our readers are requested to send in items of news, also marked copies of newspapers containing matter of interest to the membership.

Proceedings ..... I

SCIENTIFIC ARTICLES

Angle-Closure Glaucoma: An Eye Disease Which May Resemble Other Illnesses .....	47
<i>MorriSS M. Henry, M.D.</i>	
Pediatric Department History, University of Arkansas College of Medicine — 1904-1978 .....	49
<i>Vida H. Gordon, M.D.</i>	
Prophylaxis of Infection with Antimicrobial Therapy .....	55
<i>Robert S. Abernathy, M.D., Branch T. Fields, Jr., M.D., Thomas P. Monson, M.D., and Charles M. Nolan, M.D.</i>	

FEATURES

Office Orthopaedics: "X-Ray Diagnosis of the Sprained Ankle" ..	63
<i>R. Barry Sorrells, M.D.</i>	
EKG of the Month .....	66
<i>John Watson, M.D.</i>	
Arkansas Public Health At A Glance: "Skunk Rabies Epidemic in Arkansas" .....	67
<i>Thomas C. McChesuey, D.V.M., and Paul C. White, M.D.</i>	
"The Use of Anorectic Controlled Drugs in Bariatric Practice" .....	70
<i>Don Phillips, R.Ph.</i>	
Editorial: "The Brain" .....	72
<i>Alfred Kahn, Jr., M.D.</i>	
Medicine in the News .....	73
Keeping Up .....	80
Things to Come .....	80
Personal and News Items .....	81
New Members .....	81
Resolutions .....	85
Obituary .....	85

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A. E. ANDREWS, M.D.  
Texarkana  
President  
Arkansas Medical Society  
1979-1980



PROCEEDINGS

*103rd Annual Session*

ARKANSAS MEDICAL SOCIETY

Little Rock

April 22-25, 1979

**First Meeting  
HOUSE OF DELEGATES**

The first meeting of the House of Delegates of the Arkansas Medical Society during the 1979 convention was called to order at 1:30 p.m. by Speaker Amail Chudy.

The executive vice president, C. C. Long, called the roll of delegates. The following delegates, officers, and members seated as delegates by action of the House were present:

ARKANSAS, John M. Hestir; BAXTER, John F. Guenther; BENTON, Jim Arkins and Harry Harmon; BOONE, Charles Ledbetter; CHICOT, John R. Russell; CLARK, Jerry Mann; CLEBURNE, Joe B. Scruggs, Jr.; CRAIGHEAD-POINSETT, Frank James, James Robinette, John Kirkley; CRITTENDEN, Milton Deneke; DESHA, Howard R. Harris; DREW, Harold Wilson; FAULKNER, J. J. Magie; GARLAND, Gaither C. Johnston, Edgar K. Clardy, Ronald J. Bracken; GREENE-CLAY, Richard O. Martin, Larry Lawson; HEMPSTEAD, James W. Branch; HOWARD-PIKE, U. Lee Smith; INDEPENDENCE, Jim Lytle; JEFFERSON, George V. Roberson, Banks Blackwell, and Lloyd Langston; LAWRENCE, Ralph Joseph; LEE, Dwight W. Gray; LONOKE, J. F. Gartman; MILLER, F. E. Joyce; MISSISSIPPI, E. A. Shaneyfelt; PHILLIPS, Robert D. Miller; POLK, David D. Fried; POPE, Joe Lyford, James Kolb; PULASKI, Paul J. Cornell, Frank M. Westerfield, George K. Mitchell, Charles W. Logan, William G. Reese, J. Mayne Parker, Harold D. Purdy, W. Mage Honeycutt, John McCollough Smith, G. Thomas Jansen, Curry Bradburn, Raymond V. Biondo,

William L. Mason, Glen F. Baker, A. Henry Thomas, Ruth Steinkamp, David Barclay, Burton Moore, Alvah Nelson, Art Squire, Jr.; SALINE, John Frandolig; SEBASTIAN, A. C. Bradford, Carl Williams, Annette Landrum, Ken Lilly, Kenneth Wallace, Morton C. Wilson; SEVIER, George W. Dickinson; UNION, Allan Pirnique, A. R. Clowney; VAN BUREN, John A. Hall; WASHINGTON, Tom Whiting, Warren Murry, Dwight Dodson; WHITE, James H. Golleher; YELL, James Maupin; COUNCILORS, Merrill J. Osborne, Asa Crow, Paul Gray, John Bell, L. J. P. Bell, Raymond Irwin, John P. Burge, George Warren, Donald Duncan, Lynn Harris, Robert McCrary, Ray Jouett, William Jones, Morriss Henry, Rhys Williams, Charles F. Wilkins, Kemal Kutait; PRESIDENT, George F. Wynne; PRESIDENT-ELECT, A. E. Andrews; FIRST VICE PRESIDENT, Richard Pearson; SPEAKER OF THE HOUSE, Amail Chudy; VICE SPEAKER, W. P. Phillips; SECRETARY, Elvin Shuffield; TREASURER, Kenneth R. Duzan; PAST PRESIDENTS, Charles R. Henry, T. Duel Brown, Joseph Norton, Ross Fowler, John Wood, Ben Saltzman, and W. Payton Kolb.

Raymond Irwin, chairman of the credentials committee, reported that a quorum was present.

Upon motion of Charles Wilkins, the House approved the minutes of the 1978 meeting as published in the June 1978 issue of the Journal. The minutes of the winter meeting held November 19, 1978, were approved by the House upon the motion of W. Payton Kolb.

Vice Speaker W. P. Phillips introduced the



following Auxiliary guests who addressed the House:

Mrs. Ben Johnson, Jr., Bessemer, Alabama, President-elect of the American Medical Association Auxiliary; Mrs. Walter Mizell, Benton, President of the Arkansas Medical Society Auxiliary; Mrs. Frank Morgan, North Little Rock,



Hoyt Gardner of Louisville, Kentucky, president-elect of the American Medical Association, addresses the House of Delegates on April 22.



George F. Wynne of Warren makes his "President's Address" to the House of Delegates on April 22.

President-elect of the Arkansas Medical Society Auxiliary.

Speaker Chudy introduced Hoyt Gardner of Louisville, Kentucky, President-elect of the American Medical Association. Dr. Gardner addressed the House on current projects of the AMA.

Speaker Chudy called on W. P. Phillips as chairman of the Arkansas Medical Political Action Committee. Dr. Phillips reported to the House on activities of Ark-PAC and urged physicians to participate in Ark-PAC.

President George F. Wynne was presented to the House by Speaker Chudy and was accorded a standing ovation. Dr. Wynne's address as president of the Society appears following minutes of the first meeting of the House.

On behalf of the American Medical Association Education and Research Foundation, Dr. Wynne presented a check for \$16,984 to the University of Arkansas College of Medicine as an unrestricted grant. Accepting the grant for the College was William G. Reese. In presenting the check, Dr. Wynne expressed appreciation to the Auxiliary for their work in recruiting funds for AMA-ERF. He gave recognition to Mrs. Walter Mizell, president of the Auxiliary, and Mrs. Jim Bethel, Auxiliary AMA-ERF Committee Chairman.

Speaker Chudy called on the chairman of the Constitutional Revisions Committee, A. S. Koenig, who presented the following proposed amendment to the Constitution and By-Laws:

Amend Article VI of the Constitution, Council, Section 2 (Composition of the Council) to read as follows:

"The Council shall consist of the councilors, the president, first vice president, president-elect, secretary, treasurer, and immediate past president. The speaker and vice speaker of the House of Delegates and the past presidents shall be ex-officio without vote; the immediate past president shall have a vote. There shall be two councilors from each councilor district to serve staggered terms of two years each. All councilors shall have equal voting privileges. A majority of the voting members shall constitute a quorum."

The proposed amendment was referred to Reference Committee Number Two.

Speaker Chudy then called on Elvin Shuffield, chairman of the Committee on Medical Legislation, for his annual report. Speaker Chudy ex-



# THE HOUSE OF DELEGATES



Speaker Amail Chudy of North Little Rock presides at the meeting of the House of Delegates on April 22nd. Vice Speaker W. P. Phillips of Fort Smith is seated on the right.



The meeting of the House of Delegates on Wednesday, April 25, had the greatest number of voting members present of any session in recent years. In the foreground at this session are delegate James W. Branch, delegate David Fried, Past President John P. Wood, and (on the right) Mr. Bob Cearley and Mr. Mike Mitchell, legal counsel for the Society.



pressed appreciation to Dr. Shuffield for his years of work on the medical legislation committee and the House gave him a standing ovation. Dr. Shuffield's report follows the minutes of this meeting.

Speaker Chudy expressed appreciation to legal counsel and to members of the headquarters staff for their assistance to Dr. Shuffield's committee.

The Chairman of the Council, John P. Burge, presented to the House a preliminary report from the ad hoc committee to study the organizational structure of the Society. The report was referred to Reference Committee Number One as a supplement to the annual report of the Council.

A resolution on Equitable Risk Classifications in Medical Liability Premiums, submitted by Charles F. Wilkins, was referred to Reference Committee Number Three for consideration.

Carl Williams of Sebastian County requested introduction of a resolution on Ambulance Service Reimbursement. The House voted to receive the resolution as new business and the resolution was referred to Reference Committee Number Three for consideration.

Ray Biondo, chairman of the Continuing Medical Education Committee, requested a grammatical change in the report of his committee so that the recommendation to the House would be sixty hours of the total of one hundred and fifty must (rather than may) be in Category I.

Members held district meetings on the floor of the House and selected the following for appointment to the Nominating Committee:

1. Ralph Joseph, Walnut Ridge
2. John Bell, Searcy
3. John Hestir, DeWitt
4. John Russell, Lake Village
5. K. R. Duzan, El Dorado
6. F. E. Joyce, Texarkana
7. Robert McCrary, Hot Springs
8. G. Thomas Jansen, Little Rock
9. Stanley Applegate, Springdale
10. Ken Lilly, Fort Smith

The first meeting of the House during the convention ended at 3:30 p.m.

#### **PRESIDENT'S ADDRESS DR. GEORGE F. WYNNE**

There is no doubt in my mind that, when I review the outstanding memories collected dur-



A. E. Andrews, Texarkana, President 1979-80, and Kemal Kutait, Fort Smith, President-elect.

ing a lifetime in the medical profession, this year as your president will shine brighter than all the rest. You have honored me and once again I wish to say thank you. I have had a splendid year.

I have had a good relationship with the headquarters staff, Dr. C. C. Long and his group. My various committees have worked actively and successfully and we close out the year with this splendid convention.

Let me now, in the next few moments, touch on a few of our accomplishments, admonish you a little bit, and push you into a new year with a few of my ideas.

First of all, the Arkansas Medical Society is larger and stronger than it has ever been in the past. Membership is up and we are financially solvent.

Your 1979 budget was published in the March issue of the Arkansas Medical Journal and it listed income of \$466,764.00, with expenditures anticipated at \$422,450.00. So you see we are operating in the black and this is as it should be. The Council is aware that this is big business and they are formulating plans to present to the House of Delegates steps to strengthen the Budget Committee of the Society by reorganization of the committees and more frequent rotation of the budget committee membership. We need to closely watch these funds.

Your legislative committee and the legal staff of the Society have been busy this year in presenting medical legislation for action by the



# COUNCIL RECEPTION SUNDAY EVENING



Members of the Executive Committee of the Council and their wives headed the receiving line at the Council reception on Sunday evening. Reading from left to right, they are Dr. and Mrs. Elvin Shuffield, Little Rock (Secretary), Dr. and Mrs. A. E. Andrews of Texarkana (President-elect), Dr. and Mrs. John P. Burge of Lake Village (Chairman of the Council), and Dr. and Mrs. George F. Wynne of Warren (President).



Dr. L. J. P. Bell of Helena greets Mrs. A. E. Andrews in the receiving line at the Council Reception.



President-elect and Mrs. Andrews greet Dr. and Mrs. Stanley Applegate at the Council reception, as Dr. and Mrs. James Maupin visit with other members of the Executive Committee and their wives.



Ken Lilly and A. S. Koenig, Fort Smith physicians, escort Kenal Kutait of Fort Smith to the podium at the Wednesday session of the House of Delegates. The House had just elected Dr. Kutait to the position of president-elect.

General Assembly. We have been successful with most of our bills and we are proud of this work.

My special thanks go to Representative John Lipton of Bradley County (my own county representative). He was magnificent in promoting our legislative package. The old adage "It is not what you know but who you know" certainly applies here. For had it not been for this capable legislator we would have certainly failed to pass most of our bills.

House Bill 1055 (the Malpractice Bill) was passed by both the House and the Senate without a single vote of opposition.

The State Medical Board Bill was passed successfully. This allows the board to hire its own drug inspector when one is needed.

House Bill 110, which concerns the medical board receiving notice of appeal of the board decision, also passed both Houses.

All in all, we have had a good year in our Legislature.

I would certainly be amiss if I did not thank Senator Morris Henry for his splendid work in the Senate. He was also magnificent in guiding through the Senate the legislation received from

the House. We are most fortunate to have Dr. Henry in our Senate.

As for admonishing you, I have only one thing to say about a great bunch of busy doctors.

Please don't say "no" to Dr. Andrews, your new president, when he writes or calls you to serve on one of the Society's committees. He needs all the help he can get in filling the committee positions. The job is not a difficult one and usually requires one or two meetings at the most during the entire year. When he asks you to be chairman of a committee, or merely to serve on one, say "yes." You will be glad you did and so will he.

Now before I leave office let me give you a few thoughts on a few subjects that I have observed and that worry me a bit. First of all, the doctor's image, as it stands today, is not as good as it was several years ago. When I was a boy I went to a celebration for Dr. T. E. Rhine. He was a country doctor in a town of less than 200. Yet that day 5,000 people were there to honor that old country doctor. He probably did not know as much medicine as the newest graduate medical student but he knew people. He loved his practice and I dare say, he was never sued in court for malpractice. He was a past master of the art of medicine.

We are beginning to see a taxpayer's revolt and the doctors will be caught in it, if we are not careful. For example, I know of one town who recently voted, passed and built a new wing on their hospital. The doctors requested and got in the planning of the new wing. They insisted on a new nursery and delivery room. Within two years, after completion, the entire medical community announced that they would not deliver any more babies. The citizens now must travel 30 to 50 miles to neighboring towns for delivery service. Explain that to the taxpayers.

And how can a physician, who needs the art of medicine, say that he isn't taking any new patients.

You worry about governmental control over medicine. Continue with this attitude and you sure are going to get it. There may be a doctor shortage but really I think there must be some lazy doctors.

We, the doctors of Arkansas, must show the benefits of private medicine not by words but by action.



# ENJOYING CONVENTION FELLOWSHIP



At the Blue Cross-Blue Shield party on Monday evening, Dr. George K. Mitchell, BC/BS president, was on hand to extend hospitality to members of the Society. Also welcoming members were Mrs. Mitchell (left) and Mrs. Simpler, wife of the vice president of information systems of Blue Cross-Blue Shield.



Ed Palmer of Blue Cross-Blue Shield visits with Dr. and Mrs. Henry Kirby of Harrison at the Monday evening party.



Dr. A. S. Koenig, Jr., of Fort Smith visits with Mr. Bob Shoptaw of the Blue Cross-Blue Shield staff.





A. E. Andrews, president-elect of the Arkansas Medical Society, and Hoyt Gardner, president-elect of the American Medical Association, got together during the convention to discuss their responsibilities during the coming year.

When a patient presents himself for a diagnosis or treatment, regardless of who the patient is, regardless of his color, regardless of the neighborhood from which he comes, regardless of the amount of money he has, and regardless of the circumstances under which the diagnosis or the treatment is sought, he should be treated to the doctor's best ability. If we fail to treat this patient then all of the brilliant arguments made by the AMA, or the presidents of the various state societies against government medicine and for private medicine is nullified.

As physicians, we are people to whom *much* has been given and from us *much* is required. You, the doctors of Arkansas, are required to do your very best to each and every patient who seeks your services.

Now for the medical school. You are producing the best educated physicians that have ever graced your four walls, but they are not well versed in ethics, nor are they truly honest in their dealings with the taxpayers of the state.

Many students when they enter school say they are going back to the small towns of the state to practice, but few return. Many who obligate themselves to the various communities, accept

gifts, contributions to their education, summer jobs and even automobiles, will merely laugh and accept a better offer if one comes along. There is probably little you can do about this, for I guess this is human nature; but each year when the admission list comes out, I notice that some doctor's child, boy or girl, who is applying for admission was passed over. Perhaps his grades were not good enough, perhaps his medical aptitude test was low. I know the reason was good.

But I also know that "like father, like son" and that the chances of a doctor's child returning home to practice with his father are quite good. Then I think again about the oath of Hippocrates and I look on the wall of my study and read:

"I swear by Appollo to reckon him who taught me this art equally dear to me as my parent. To regard his offspring as on the same footing with my own brother, and to *teach* them this art. I will impart knowledge of the art to my *own* sons and to those of my teachers, and to disciples (*other physicians*) bound by a stipulation and oath, according to the law of medicine."

I feel that there is a special place for a doctor's child. That child knows the hardships of medical practice, he knows that as a child he had to take second place in his father's heart to the call of medicine and his father's patients. He has known disappointments at birthdays, at Christmas, and at graduation, when his physician father was called away. And now, in spite of all of this, if he expresses a desire to enter the study of medicine, he should be given the chance. If I were on the admissions committee, I would lean over backwards to see that that child was given a chance for a medical education.

(Let me interject here that I have four children and none of mine tried to enter medical school.)

But with all of its faults and all of its problems, I have a boundless faith in the medical profession of Arkansas.

Our future, I firmly believe, will not be determined by those who oppose us but by our own willingness to accept the responsibilities which are naturally ours.

My feeling is the same as that of the anonymous poet who gave us these words of wisdom



# ENJOYING CONVENTION FELLOWSHIP



Dr. and Mrs. Raymond Irwin and their daughter visit with Dr. David Barclay during one of the evening parties.



Dr. and Mrs. George F. Wynne at the Blue Cross-Blue Shield party with Mr. Sam Holliday of Blue Cross-Blue Shield.



Dr. and Mrs. Asa Crow of Paragould visit with Dr. and Mrs. Ralph Joseph of Walnut Ridge during a convention party.

regarding the control of one's own destiny, regardless of outside influences.

One ship drives east and another west  
With the self same winds that blow.  
It's the set of the sails and not the gales  
That tells them where to go.  
Like the winds of the sea and the winds of fate  
As we voyage along through life,  
It's the set of the soul that decides the goal  
And not the calm or the strife.

We do control the destiny of medicine, and  
the key is work, good medicine and personal  
kindness.

**REPORT OF THE COMMITTEE ON  
MEDICAL LEGISLATION  
Elvin Shuffield, Chairman**

This Legislative Session is on record as being one of the three longest in the history of our State. It met for 87 days, has recessed and will probably meet again to finish up some of its business. A great number of bills that have been passed by both Houses still have not been signed by the Governor. Also, a record number of bills were introduced in this session, a total of almost 2,000 bills being introduced, about 1,200 in the House and almost 800 in the Senate.

Your Legislative Committee would like to take this opportunity to thank all of you who served as "Doctors of the Day" in the Legislature. Senate Concurrent Resolution No. 90 was passed and the title states that: "It commends the Ar-

kansas Medical Society for providing 'Doctor of the Day' to staff the Senate and House Infirmary during the 72nd General Assembly." You people do not realize how much a doctor just being in the building seems to mean to these folks. They seem to be very apprehensive and they are under considerable tension. For the information of this Society the following laws have been enacted:

**ACT 54**

This exempts from gross receipts sales tax on prescription drugs.

**ACT 55**

This Act provides that physicians rendering voluntary emergency service to participants injured in school athletic events will not be liable for civil damages except for gross negligence.

**ACT 150**

This Act provides that the Medical Board may set dates for its meetings and may employ attorneys and investigators. In the past the law had stated that the Board would meet twice a year and some of the features of the law did not give enough elasticity for the increase in the amount of business that the Board has before it. Also, the old dates were not flexible to where the FLEX examination could be given at the proper time.

**ACT 28**

This Act transfers the licensing and supervision of nursing homes from the Health De-



Executive Vice President C. C. Long serves temporarily as the Council elects a chairman for 1979-80.



# TUESDAY EVENING FESTIVITIES



President George F. Wynne and his family at party on Tuesday evening.



Vice Speaker W. P. Phillips and Mrs. Phillips visit with Executive Vice President C. C. Long at the Tuesday evening party.



President-elect and Mrs. A. E. Andrews at head table. Inaugural Banquet, April 24.



Mrs. Joe Verser visits with Dr. and Mrs. Ross Fowler.



President and Mrs. Wynne at Inaugural Banquet. Tuesday, April 24.



Mrs. Wynne, Mr. and Mrs. John Lipton, Secretary Elvin Shuffield and Mrs. Shuffield at Inaugural Banquet. Tuesday, April 24.

partment to a Social Services Division of the Human Services Department.

*ACT 218*

This Act requires pharmacists to put the trade or generic name of drugs on prescription labels. We had this amended to where it is at the discretion of the physician. If for some reason you think it is best that your patient not know what is in the prescription, then you may so mark your prescription that it not be labeled.

*ACT 99*

This Act defines death. Up until this bill passed there has never been any law really defining or explaining death. It has been by custom that a determination of death has been made. This law will permit that when it has been proven that all brain activity has ceased, then this patient may be pronounced dead. If you are in an area that does not have the equipment for determining brain activity then you are to continue the old custom of when heart beat and respiration have ceased, then the patient is pronounced to be dead.

*ACT 601*

This Act provides that on request of the superintendent of schools, representatives of the Health Department will visit schools to check for and assist with medical problems of students.

*ACT 616*

This Act is the Sudden Infant Death Syndrome Act in which these deaths have to be reported so that statistics can be compiled to see if anything can be done to try to prevent these deaths from occurring.

*ACT 609*

This Act extends the Professional Liability Re-insurance Exchange until March 31, 1981, so that any physician who cannot get malpractice insurance can apply to the exchange for coverage.

*ACT 613*

This Act provides for licensing of Registered Nurse Practitioners. This Act merely permits the Nurse Practitioner to only practice under the supervision of a physician. Her other duties and actions are just about the same as they were before for the Registered Nurse Practice Act.

*ACT 710*

This was House Bill 843 which authorized optometrists to utilize diagnostic pharmaceutical agents. As you know, this has been one of the

most controversial pieces of legislation that we have encountered in the last few years. This bill was dead in committee on a Wednesday but by Friday it had been resurrected, amended and then passed without any difficulty. The amendments that were supposed to make this bill palatable are as follows:

It now says that drugs may be used for examination purposes only, not for diagnosis or therapy. This is a somewhat clever innovation and to me it only protects an optometrist for his inability to make a diagnosis or treat an eye. Then the Governor added a committee composed of two optometrists, one ophthalmologist, the director of the Health Department and the Dean of the College of Pharmacy. This committee must approve all optometrists authorized to use the drugs and in so doing must prepare or approve a comprehensive test which all who seek to use approved drugs must pass. Also, this committee must approve all drugs that are to be used by the optometrist. As you can readily see, there is only one man on this five-man committee that has any practical knowledge in the use of drugs in people's eyes. It appears that most of the optometrists ran to Little Rock for about six Saturday mornings and took a course in pharmacology which is supposed to equip them for being able to use these drugs. Only time can tell what this legislation is going to do to the people of the State of Arkansas.

*ACT 704*

Provides that court reviewing agency action under Administrative Procedures Act must give notice and opportunity for hearing before staying action. This assists Medical Board actions.

*ACT 709*

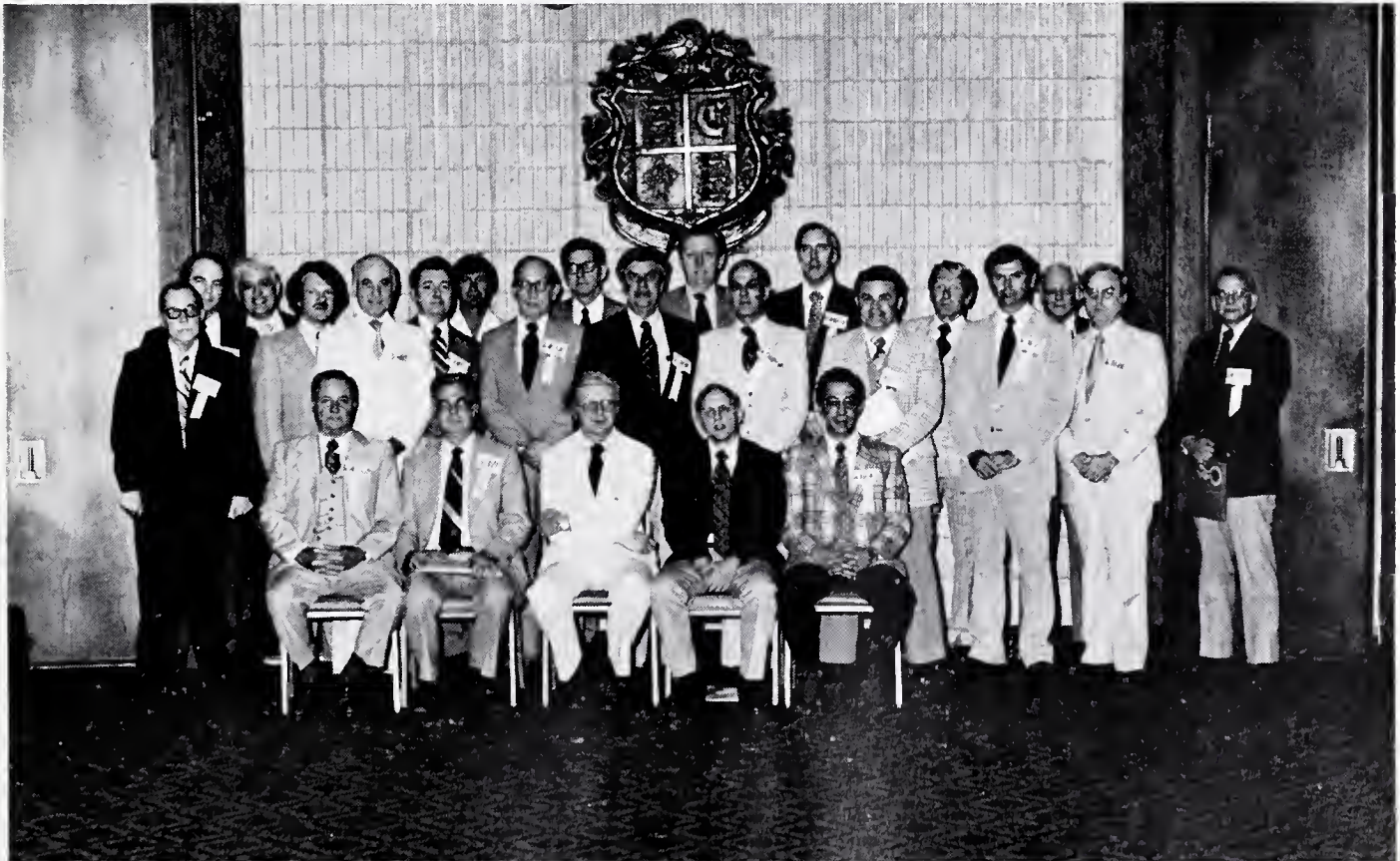
This Act is our Malpractice Bill. You, ladies and gentlemen, will never know the stumbling blocks that we encountered with this legislation. Naturally, it was sent to the House Judiciary Committee in the very beginning and we attempted to try to get together and work out some type of legislation that would be fair and equitable to all parties concerned. There were numerous delays and finally the Committee came to a showdown and instructed the opposing parties to get together and try to come back with legislation that was agreeable. Mr. Warren, Mr. Mitchell, Mr. LaMastus and myself met with the representatives from the Arkansas Trial



# OFFICERS FOR 1979-1980



Principal officers of the Arkansas Medical Society for the coming year are (left to right) Treasurer K. R. Duzan of El Dorado, Secretary Elvin Shuffield of Little Rock, President A. E. Andrews of Texarkana, President-elect Kemal Kutait of Fort Smith, and Council Chairman John P. Burge of Lake Village.



The Council of the Arkansas Medical Society for 1979-80 is composed of (seated, left to right) Secretary Elvin Shuffield of Little Rock, Treasurer Kenneth R. Duzan of El Dorado, Chairman of the Council John P. Burge of Lake Village, President A. E. Andrews of Texarkana, President-elect Kemal Kutait of Fort Smith, (standing, left to right) Councilors Paul Gray of Batesville, William Jones of Little Rock, Ken Lilly of Fort Smith, Jerry Mann of Arkadelphia, Lynn Harris of Hope, Ray Jouett of Little Rock, John Bell of Searcy, Charles Wilkins of Russellville, Raymond Irwin of Pine Bluff, Asa Crow of Paragould, L. J. P. Bell of Helena, Speaker of the House Amail Chudy of North Little Rock, Councilors George Warren of Smackover, John Hestir of DeWitt, Rhys Williams of Harrison, Vice Speaker W. P. Phillips of Fort Smith, Past President W. Payton Kolb of Little Rock, and Councilors Merrill J. Osborne of Blytheville, and Robert McCrary of Hot Springs.



Lawyers Association, Arkansas Bar Association and other interested attorneys in two rather lengthy sessions. Tempers approached the boiling point on several occasions but no blows were exchanged and after about 44 corrections and arbitrations, our original bill was so changed, for example, a lot of times it was just grammatical corrections and some instances just delaying tactics that we felt it was best to re-draft another bill rather than to take a chance on trying to redo the original bill with so many amendments. We appeared before the Committee and told them our problems and even though the deadline had passed, the House Judiciary Committee granted us permission to draft a new bill with all the arbitration being placed in the bill and it was given a new number, House Bill 1055. In this bill we had the statute of limitations for minors down to age 10 and were successful in getting this passed through the committee in spite of strong objections, particularly from one man in the committee along with some assistance. When the bill reached the floor this main opponent was successful in amending our statute of limitations from age 10 to age 19. This legislation eliminates the *Ad Damnum* clause. It permits in determining judgments that the losses be tallied in economic losses and non-economic losses and permits payments at monthly intervals. When and if the plaintiff deceases, then the non-economic losses will also cease. All in all, I think we have made considerable progress in getting this law enacted with as much as we have within this law. It was not possible to pass with a contingency bill in there. Also, if you will recall, this is a modification of the New Hampshire law and they had to make some changes to comply with the Arkansas Constitution. Please remember now that this is subject to test in court. Whether it will be brought into court remains to be seen. We now have a framework where in the future we can try to build to this and improve the malpractice atmosphere in Arkansas. Incidentally, I wish you could have heard the Insurance Commissioner testify at the first hearing. He represented himself as being a neutral witness but every statement he made was very detrimental to our efforts, in fact he stated that in his opinion there was no malpractice problem in Arkansas. He was challenged on this statement and he did write a letter to each member of the House Judiciary

Committee trying to make some of his statements a little more palatable. Also, since this legislation has passed at least one company has contacted us and they are looking into the feasibility of starting to write malpractice coverage in Arkansas.

#### *ACT 631*

This Act amended the Physical Therapy Act permitting physical therapy assistants which will help a number of our hospitals in this state.

#### *ACT 498*

This Act allows qualified county coroners to draw blood samples from deceased persons for determining presence of chemical elements that may have contributed to death.

Another bill that has been signed into law, but I have not been able to determine the Act number, provided for the Governor to appoint the director of the Health Department. We were fortunate in being able to salvage the requirement that the man did have to be an M.D. It did delete the seven year requirement of practicing in this state but the original presentation was in such a manner that the Health Director did not necessarily have to be an M.D. Also, legislation was enacted where the assistant director of the Health Department does not have to be an M.D. In fact, my information is that he will be a sanitation engineer.

House Bill 688 was the Arkansas Trial Lawyers' Statute of Limitation Bill which would have greatly liberalized the statute in favor of these attorneys and their plaintiffs. Fortunately, after our malpractice bill got to moving with its clarification of statutes, and incidentally, this does provide for recovery if a foreign body such as a forcep or sponge is left in the wound, which will be beneficial to deserving patients. Also, the new act puts into law what the Supreme Court has already determined as a two year limit on most medical procedures that provided or lead toward malpractice.

House Bill 847 transfers the administration of the Controlled Substance Act to the Health Department and provides that the office on alcohol and drug abuse will have education duties. It re-defines the narcotic addict and clarifies duties of the Pharmacy Board. This has passed both Houses and apparently is still in the Governor's office. We, the people of this state, were in great need of this particular bill, because prior to this legislation the supervision of the



# PARAGOULD REPRESENTATION AT MEETING



Dr. Hoyt Gardner of Louisville, Kentucky, the president-elect of the American Medical Association, was a guest of the Society during its annual meeting. Dr. Gardner is a native of the Paragould area and some of the other Paragould physicians posed for the photographer with Dr. Gardner. The new president of the Society, A. E. Andrews, practiced in Paragould for 13 years; Asa Crow of Paragould is a Society councilor; J. Larry Lawson of Paragould was chairman of the Scientific Exhibits for the 1979 meeting; Richard Martin of Paragould was third vice president of the Society during the past year.

controlled substances was fragmented under five different agencies and sometimes there was excessive duplication of efforts and other times one agency is waiting for another one to act and consequently nothing was done.

Other legislation that was of interest to the medical profession was a proposal of "Arkansas Natural Death Act." This was an extremely complicated piece of legislation. It had numerous forms to be filled out and signed in the presence of witnesses and countersigned and to me it seemed like it would have been impossible to have all the red tape taken care of in an unconscious or terminal patient who was not capable of filling out some of these forms. Fortunately this was withdrawn.

A number of regional health centers were approved by both Houses, but these proposals were withdrawn pending the reorganization of the Health Department.

Then there was legislation repealing the requirement that motorcycles be equipped with crash bars. There was also a companion bill that

provided that motorcyclists age 18 or over would not have to wear protective headgear. Fortunately, these two bills were tied up in the Senate Public Health Committee and they should have never reached that committee. They should have been killed in the House.

House Bill 107 was our bill to change the definition of physician and to require that chiropractors designate themselves as chiropractic physicians and not just use the word physician. This really hit the fan and it soon became very obvious that we did not have a chance to pass this bill out of committee with the chiropractor sitting there. Also, apparently these folks are misleading lots of people and insurance carriers into thinking that they are real physicians.

There were bills introduced that would provide rural medical clinic revolving loan funds. This was designed to try to encourage doctors to build clinics in rural areas and was to make up to about \$150,000 available for about six clinics each year. This is Act 1093. Then there



was a companion bill appropriating funds for a rural medical clinic revolving loan fund and would allow for physicians in small towns to apply for a grant of \$6,000 as income supplement. This is Act 1094.

There was legislation introduced which would permit conditions under which a child would be excused from immunizations on religious grounds. This, too, passed both Houses, but fortunately was recalled from the Governor's office on March 30.

I want to thank Dr. Wynne, Mr. Warren, Mr. Mitchell, Mr. Cearly, Mr. LaMastus, Dr. Long and Miss Richmond, the Legislative Committee and all of you who assisted.

### RESOLUTION

**SUBJECT:** Equitable Risk Classifications in Medical Liability Premiums.

WHEREAS, the risk of medical malpractice action to any particular category of physicians is variable and dynamic, requiring frequent study and updating of loss experience; and

WHEREAS, there is general agreement that medical liability insurance premiums should reflect the actual cost and risk of providing insurance to any particular category or group,

THEREFORE BE IT RESOLVED, That Arkansas Medical Society supports the concept that premium schedules for medical liability insurance should be based on the actual cost and risk of providing that insurance to each individual group or category.

Submitted by: Charles F. Wilkins, Jr., M.D.  
Councilor, Tenth District

### RESOLUTION

*Introduced by:*

Sebastian County Medical Society

*Subject:*

Ambulance Service Reimbursement

WHEREAS, the case of seriously ill or injured patients in transit to hospitals is much improved with the development of Emergency Medical Services staffed with certified Emergency Medical Technicians in well equipped ambulances, and

WHEREAS, the professional quality of these services is costly to provide, and

WHEREAS, in some cases, hospital stay is shortened by competent transfer from the hospital in an ambulance,

THEREFORE BE IT RESOLVED, That the Arkansas Medical Society, through its offices, recommend a satisfactory level of reimbursement by Medicare and other third party payers, appropriate to the expense of such services.

### SUPPLEMENTAL REPORT OF THE COUNCIL

**(Organizational Study Committee)**

**(Kemal Kutait, M.D., Chairman)**

In November 1977, the House of Delegates of the Arkansas Medical Society approved a resolution from the Boone County Medical Society as follows:

"Resolved that an Ad Hoc Committee be appointed by the President of the Arkansas Medical Society to study the governing structure of the Arkansas Medical Society and especially the advisability of making revisions in the Constitution and By-Laws to broaden the base of representation on the Council and the Executive Committee and to present to the Society specific proposals for amendments if the committee should determine that amendments are advisable."

The resolution was approved with the understanding that the committee would report to the Council of the Society. The Chairman of the Council requested that the Boone County Medical Society furnish information on those areas of most concern so that direction could be given to the committee on its scope of work. The Boone County Medical Society elected to present information to the committee orally, rather than to submit to the headquarters office background information on the county society's thoughts on the representation base of the State Society.

Appointed to the committee by the Society president were:

Forney Holt, M.D., Texarkana

Rhys Williams, M.D., Harrison

T. E. Townsend, M.D., Pine Bluff

Paul Wallick, M.D., Monticello

William N. Jones, M.D., Little Rock

Kemal Kutait, M.D., Fort Smith, Chairman

The committee has held five meetings. Members of the committee have spent many hours discussing the organizational structure and areas where change is needed. To assist the committee in its study, information was obtained from seven neighboring state medical societies for comparative study.

County societies were polled for an expression

of opinion concerning seating of unelected delegates in the State Society House of Delegates. Responses from the county societies were about evenly split on that issue.

A letter was also forwarded to each member of the State Society asking for ideas from the membership on desired changes in the organizational structure. A total of 1,828 letters were mailed, 38 responses were received. While some ideas were presented which had not been considered by the committee, most of the comments pertained to areas already defined by the committee as subjects for study.

The committee felt that there were primarily five areas which should be given priority in its study. The discussion of the committee to date has concentrated on those areas. The committee would like to present a preliminary report to the Council at this time so that the committee may be guided in its further deliberations by reactions to these tentative proposals.

The committee does not endorse the following ideas per se but recommends them to the Council for discussion purposes and to allow input from the Council and the general membership. We present these items for discussion:

- (1) The number of councilors remains at twenty.
- (2) The concept of redistricting councilor districts to assure more equal representation.
- (3) The term of office of councilor be limited to three two-year terms, with two years off the Council before being eligible for re-election.
- (4) The concept of restructuring the executive committee to make it more representative of the Council; it was proposed that consideration be given to enlarging the Executive Committee to add the Speaker of the House, Immediate Past President, and one councilor elected at large to the present membership of the President, President-elect, Council Chairman, and Secretary.
- (5) Elimination of the By-Laws provision which allows any member of a county society to be seated in the House of Delegates of the State Society if the component society's regularly-elected delegate is not present.

This preliminary report on the progress of the committee's study is offered at this time so that there will be an opportunity for input from the Council and the general membership to provide



A. E. Andrews takes the oath of office of president of the Arkansas Medical Society, April 24, 1979.



Immediate Past President George F. Wynne receives plaque of appreciation from A. E. Andrews. April 24, 1979.



guidance to the committee in its work. We would like to again mention that the committee does not endorse these recommendations, we are simply presenting them for discussion purposes so that recommendations from the committee, when submitted, will be in keeping with the philosophy of the Council and the membership.

The committee will be continuing its study and making recommendations in other areas—

including limitation on term of office for all Society positions.

The committee requests that the Council give an expression of opinion on its preliminary report and hopes that the entire report will be referred to the House of Delegates for discussion by a reference committee. The committee recommends that no action be taken on implementation of any of these ideas until the committee has completed its study of all issues.



## FINAL SESSION

### HOUSE OF DELEGATES

**Wednesday, April 25, 1979**

Speaker Amail Chudy called the House to order at 10:00 a.m. on Wednesday, April 25, 1979, and called on Ken Lilly for the invocation.

Executive Vice President C. C. Long called the roll of delegates. The following delegates, officers, and members seated as delegates by action of the House were present:

ARKANSAS, John M. Hestir; BAXTER, John F. Guenther; BENTON, Michael Reese, Harry Harmon; BOONE, Charles Ledbetter; CHICOT, John R. Russell; CLARK, Jerry Mann; CLEBURNE, Max Baldridge; COLUMBIA, John Ruff; CRAIGHEAD-POINSETT, Frank James, James Robinette, John Kirkley; CRITTENDEN, Milton J. Deneke; DALLAS, Don G. Howard; DREW, Harold Wilson; FAULKNER, J. J. Magie; GARLAND, Gaither C. Johnston, Ronald J. Bracken, James L. Gardner; GREENE-CLAY, Richard O. Martin, Larry Lawson; HEMPSTEAD, James W. Branch; HOT SPRING, Russell Cobb; HOWARD-PIKE, U. Lee Smith; INDEPENDENCE, Jim Lytle; JEFFERSON, George Roberson, Banks Blackwell, Lloyd Langston; LAWRENCE, Ralph Joseph; LEE, Dwight W. Gray; LITTLE RIVER, James D. Armstrong; MILLER, F. E. Joyce; MISSISSIPPI, E. A. Shaneyfelt; NEVADA, H. Blake Crow; OUACHITA, Cal R. Sanders; PHILIPS, Robert D. Miller; POLK, David D. Fried; POPE, Joe Lyford, James Kolb; PULASKI, Paul J. Cornell, George K. Mitchell, Charles W.

Logan, William G. Reese, J. Mayne Parker, Harold Purdy, Fred Kittler, W. Mage Honeycutt, John McCullough Smith, G. Thomas Jansen, Curry Bradburn, Raymond V. Biondo, Douglas Smith, William L. Mason, Glen F. Baker, A. Henry Thomas, Ruth Steinkamp, David Barclay, Burton Moore, Alvah Nelson, and Roger Bost; RANDOLPH, Albert L. Baltz; SALINE, John Frandolig; SCOTT, Harold B. Wright; SEBASTIAN, A. C. Bradford, Carl Williams, Annette Landrum, Kenneth Wallace, Morton C. Wilson, Eldon Pence, and Carl Wilson; SEVIER, George Dickinson; UNION, Allan Pirniquie, Wayne G. Elliott; VAN BUREN, John A. Hall; WASHINGTON, Dwight Dodson, E. Mitchell Singleton, and Warren Murry; YELL, James Maupin; COUNCILORS, Merrill J. Osborne, Paul Gray, Raymond Irwin, George Warren, Donald Duncan, Ray Jouett, Morris Henry, Charles Wilkins, Asa Crow, John E. Bell, L. J. P. Bell, John P. Burge, J. B. Jameson, Jr., C. Lynn Harris, Robert F. McCrary, William N. Jones, Rhys Williams, Kemal Kutait; PRESIDENT, A. E. Andrews; FIRST VICE PRESIDENT, Richard Pearson; SPEAKER OF THE HOUSE, Amail Chudy; VICE SPEAKER OF THE HOUSE, W. P. Phillips; SECRETARY, Elvin Shuffield; TREASURER, Kenneth R. Duzan; PAST PRESIDENTS, Charles R. Henry, T. Duel Brown, Joe Verser, C. R. Ellis, H. W. Thomas, Ross Fowler, Jack W. Kennedy, Stanley Applegate, Robert Watson, John P. Wood, Ben N.

Saltzman, A. S. Koenig, Jr., W. Payton Kolb and George F. Wynne.

John M. Hestir, chairman of the Nominating Committee, presented the following nominations for consideration of the House:

For President-elect: Kemal Kutait, Fort Smith, and Stanley Applegate, Springdale.

For First Vice President: Paul J. Cornell, Little Rock.

For Second Vice President: Richard Martin, Paragould.

For Third Vice President: Annette Landrum, Fort Smith.

For Treasurer: Kenneth R. Duzan, El Dorado.

For Secretary: Elvin Shuffield, Little Rock.

For Speaker of the House of Delegates: Amail Chudy, North Little Rock.

For Vice Speaker of the House of Delegates: W. P. Phillips, Fort Smith.

For Councilor (two-year terms):

District 1: Merrill J. Osborne, Blytheville.

District 2: Paul Gray, Batesville.

District 3: John M. Hestir, DeWitt.

District 4: Raymond Irwin, Pine Bluff.

District 5: George W. Warren, Smackover.

District 6: Donald Duncan, Texarkana.

District 7: R. Jerry Mann, Arkadelphia.

District 8: Ray Jouett, Little Rock.

District 9: Morris Henry, Fayetteville.

District 10: Charles F. Wilkins, Russellville.

For Councilor (one-year term):

District 10: Ken Lilly, Fort Smith.

For Delegate to the American Medical Association (term from January 1, 1980, to December 31, 1981): T. E. Townsend, Pine Bluff.

For Alternate Delegate to the American Medical Association (term from January 1, 1980, to December 31, 1981): Richard Pearson, Rogers.

For Member-at-Large position on the State Board of Health:

Wayne Elliott, El Dorado.

Max Thorn, Little Rock.

Robert Miller, Helena.

Vice Speaker Phillips asked for nominations from the floor. Stanley Applegate requested that his name be removed from the proposed slate. Upon motion of Koenig and Wynne, the nominations of the committee were elected unanimously by the House.

Vice Speaker Phillips asked A. S. Koenig and Ken Lilly to escort the new president-elect to the podium. Dr. Kutait made the following re-

marks in accepting the nomination for president-elect:

"Thank you very much for this great honor. I will work hard to fulfill the responsibilities of the office and I assure you that I will represent you to the very best of my abilities. Thank you very much."

Speaker Chudy called for consideration of old business. He requested that members of the Location Study Committee move to a table at the front of the room. The committee was composed of:

District 1: John Kirkley, Jonesboro.

District 2: Jim Lytle, Batesville (Chairman).

District 3: John M. Hestir, DeWitt.

District 4: Banks Blackwell, Pine Bluff.

District 5: K. R. Duzan, El Dorado.

District 6: Lynn Harris, Hope.

District 7: Robert McCrary, Hot Springs.

District 8: Ray Jouett, Little Rock.

District 9: Morris Henry, Fayetteville.

District 10: Ken Lilly, Fort Smith.

Speaker Chudy reviewed the charge to the committee as set out by the House of Delegates at the 1978 meeting:

"The committee's duty would be to gather all possible information regarding cost of moving the office, cost of maintaining an office, possible locations for the office, including cities other than Little Rock, the effects of such a move on the Society employees, or any other pertinent information. That if, in the course of its study, the committee needed outside, expert consultation, it should contact the Council for approval of such an expenditure as necessary. Further, that all of the committee's information be transmitted to the component societies and their delegates at least sixty days prior to the 1979 Annual Session and that an appropriate vote as regards the home office be taken as a matter of old business at the Wednesday session of the House of Delegates in the 1979 Annual Session."

Speaker Chudy then called on the chairman of the committee, Jim Lytle. Dr. Lytle expressed thanks to the members of the committee for their many hours of work. He referred members of the House to the report previously furnished and advised Speaker Chudy that he had no further report or comment on behalf of the committee. The report which the committee had submitted to the delegates provided information on the



lease for the building in Fort Smith which is effective until January 1986, operating cost figures which would be affected by a change in location, rates on space in Little Rock, and figures compiled by a consulting firm on relocation expenses. The report from the consulting firm estimated a cost of \$66,160 as a one-time moving cost and \$48,116 additional operating expenses for the first year in Little Rock, a total of \$114,276 for the first year. For subsequent years, the additional operating expense was estimated at \$51,261 for the second year, increasing to \$61,425 in the fifth year. The committee report stated that it would cost approximately \$68 per member the first year to move the office to Little Rock and the yearly operating expenses for the office would increase approximately \$32 per year in subsequent years in the Little Rock location. (Note: The per member costs were based on 1978 membership and estimates for 1979; last year's membership total was 1,867 and this year we have 180 dues-exempt members, for a total of 1,687 estimated dues-paying members.) The committee concluded its report with the following statement:

"The committee feels that it has complied with the directive of the House in gathering information regarding costs. The committee has given consideration to the effect of a move on the Society employees and has discussed opinions expressed by committee members on the advantage of having the headquarters office in a more central location. However, the committee realizes that there are some issues which can be resolved only by a vote of the members of the House. The committee feels that the delegates must weigh the information on the costs, the possibility of having to replace the staff, the question of whether the staff could do a more effective job in a Little Rock location, and vote their conviction when the matter comes before the House of Delegates."

Speaker Chudy recognized committee member John Kirkley for a minority report.

Dr. Kirkley spoke in favor of having the headquarters office in Little Rock where all State and Federal offices are so that communications would be easier and the Society could better serve all members. He referred to the majority report last year from the committee which studied the feasibility and desirability of estab-

lishing a branch office in Little Rock and his minority report as considered by the House at the 1978 meeting. He also discussed the creation of the ad hoc committee on the location of the headquarters office, expressing the feeling that councilor district eight (Pulaski County) with one member on the committee had not been given democratic representation on the committee. He also discussed the controversy in the committee regarding the hiring of a consulting firm. Dr. Kirkley questioned the accuracy of the figures quoted by the committee report on the cost per member for moving the headquarters office to Little Rock and the operating cost at that location. He expressed the opinion that moving the headquarters office to Little Rock would be worth the extra cost. Dr. Kirkley stated that he felt the Society was being dominated by members in South Arkansas and Fort Smith and that a move to Little Rock would result in a more democratic organization. He expressed the opinion that the staff should be able to find other employment in Fort Smith and that the effect of a move on headquarters personnel should have no real bearing on the decision regarding the medical government of 1,850 physicians.

Dr. Kirkley moved that the Arkansas Medical Society move the headquarters office of the Society to Little Rock by April 1, 1980, and that the vote on the motion be by secret ballot.

A. C. Bradford of Sebastian County proposed an amendment to the motion as follows: That the annual dues of the Society be increased to \$293 for the first year and \$257 for the subsequent years to finance the increased cost for moving the office as proposed.

The result of the secret balloting on the amendment was 71 against and 45 for the amendment.

Speaker Chudy then called for discussion on the main motion. The question was called after discussion by three members of the House. Voting by secret ballot, the House rejected, by 77 to 39, the motion to move the headquarters office to Little Rock. In reporting the results of the vote to the House, Raymond Irwin, chairman of the credentials committee serving as tellers, called attention of the House to the fact there were 116 votes cast on the issue, the largest number of members of the House voting on any issue in many years. There were 142 eligible to vote on

PROCEEDINGS



Speaker of the House Amail Chudy discusses Society business with First Vice President Richard Pearson and Councillor William Jones.



Dr. and Mrs. Rhys Williams greet Dr. and Mrs. Lynn Harris during the convention. Drs. Williams and Harris are district councillors.



Dr. and Mrs. George W. Warren visit with Mrs. Amail Chudy and Mrs. Dwight Gray.



the proposal and the 116 present and voting indicated the great interest of the membership in the issue.

Speaker Chudy expressed appreciation to the members of the location study committee for their service.

The Speaker then called for reports from the three reference committees. The reports were presented by the chairmen and acted upon as follows.

#### REFERENCE COMMITTEE NUMBER ONE

**Richard N. Pearson, Chairman**

The members of Reference Committee Number One were Annette Landrum, Paul Cornell, William L. Mason and myself as chairman.

The committee met on Sunday, April 22nd, and considered the following reports:

Report of the Sub-Committee on Liaison with Vocational Rehabilitation, John P. Wood, Chairman.

Report of the Seventh District Councilor, Robert F. McCrary.

Report of the Eighth District Councilor, W. Ray Jouett.

Report of the Arkansas Foundation for Medical Care, Paul C. Schaefer, Executive Director.

Mr. Speaker, Reference Committee Number One recommends the acceptance for filing for the above reports as published in the Journal of the Arkansas Medical Society and I so move. It was so ordered by the Speaker.

Report of the Council, John P. Burge, Chairman.

Mr. Speaker, Reference Committee Number One recommends the adoption of the above report as published in the Journal of the Arkansas Medical Society and I so move. There was no objection and the report was adopted.

Supplemental Report of the Council, John P. Burge, Chairman.

Mr. Speaker, Reference Committee Number One recommends the following action regarding the various parts of the Supplemental Report:

Part 1 — The committee felt that the number of councilors should remain at twenty.

Part 2 — The concept of redistricting councilor districts should be sent back to the committee for further study.

Part 3 — Limit of councilor terms should be rejected.

Part 4 — Concept of restructuring the executive committee should be rejected.

Part 5 — Elimination of By-Laws provision which allows any member of a county society to be seated in the House of Delegates of the State Society if the component society's regularly-elected delegate is not present should be rejected.

Mr. Speaker, I move that the House approve the recommendations of the Reference Committee. There followed discussion on the intent of the report under consideration. By motion of Rhys Williams, the House voted to take no action on the Supplementary Report of the Council covering the progress report of the organizational study committee.

Report of the Medical Legislation Committee, Elvin Shuffield, chairman. The committee recommends that the Arkansas Medical Society express its appreciation to Dr. Shuffield with some permanent, lasting recognition for the dedication and outstanding contribution that he has made to the Medical Legislation Committee for many years. Mr. Speaker, Reference Committee Number One recommends acceptance for filing of the report as presented by Dr. Shuffield on Sunday and I so move. It was so ordered.

Budget Committee, Ken Lilly, chairman. Reference Committee Number One recommends adoption of the Budget Committee report as submitted. This was approved by the House. The Reference Committee then further recommended that the Budget Committee:

(1) Publish the proposed budget in its entirety and in detail or make available to all members of the Society. (Upon motion of Dr. Pearson, this recommendation was approved by the House.)

(2) Be reorganized and enlarged for more membership representation. (By standing vote, the House rejected this recommendation of the Reference Committee.)

(3) That an accountant be allowed to sit on the Budget Committee and provide input. (Upon motion of Pearson, the House approved this recommendation of the Reference Committee.)

Committee on Continuing Medical Education, Raymond Biondo, Chairman. Mr. Speaker, this Reference Committee recommends that the report be adopted and further suggests that the committee work to further delineate ways and means of documentation and compliance, and I so move. After much discussion of the recommendation, and upon the motion of Robert McCrary, the House voted to table the recommenda-



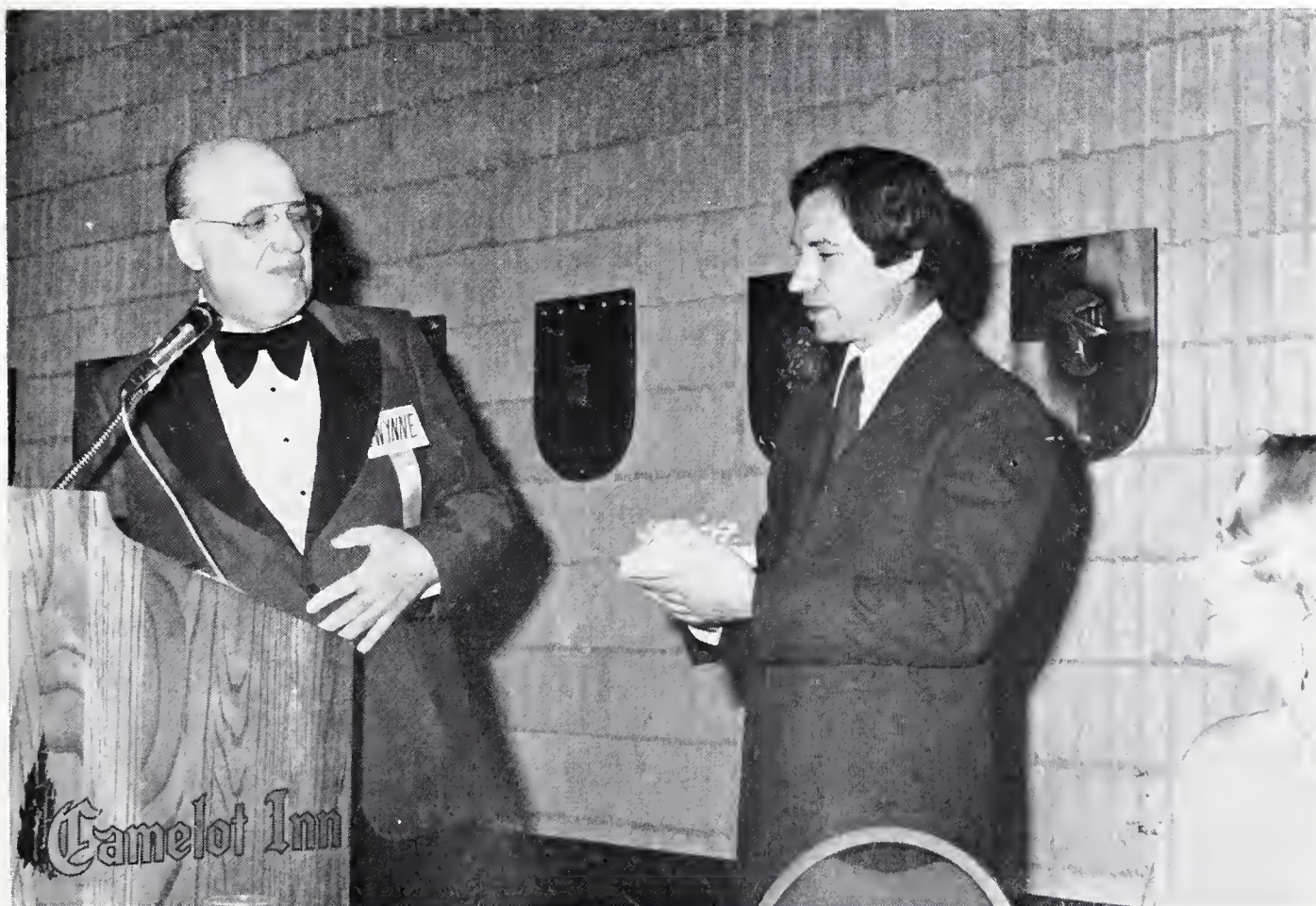
PROCEEDINGS



A. E. Andrews of Texarkana addresses the membership after being installed as president of the Arkansas Medical Society, April 24, 1979.



President George F. Wynne was master of ceremonies for the annual banquet on April 24, 1979.



State Representative John Lipton was a special guest of his constituent, President George Wynne, at the annual banquet on April 24.



tion of the Reference Committee and to refer the Report of the Committee on Continuing Medical Education back to the CME Committee for further study and report back to the House of Delegates at the 1980 Annual Session. The Continuing Medical Education Committee was asked to work with the Constitutional Revision Committee in its study of this issue.

Dr. Pearson then continued with the conclusion of his report: Mr. Speaker, I move that the House adopt the Report of the Reference Committee as amended. I express thanks to the members of the committee and to those members of the Society who took part in the discussions. The report of Reference Committee Number One, as amended, was adopted by the House.

#### REFERENCE COMMITTEE NUMBER TWO

**Joe Lyford, Chairman**

Reference Committee Number Two consisted of F. E. Joyce, A. C. Bradford, G. Thomas Jansen and myself.

Your reference committee considered the following reports:

1. Sub-Committee on National Legislation, Richard Pearson, Chairman.
2. Constitutional Revision Committee, A. S. Koenig, Chairman.

Your reference committee recommends approval of these reports as written.

3. Ad Hoc Committee on Liaison with Health Systems Agencies, Kemal Kutait, Chairman.

The reference committee recommends approval as written and would like to stress the importance of the physician members of the Health Systems Agencies and to encourage component societies to ensure that the members from their areas are active in these agencies.

4. Private Insurance Review Committee, Austin Grimes, Chairman.
5. Medical Services Review Committee, Charles Wilkins, Chairman.
6. Tenth District Councilor, Charles Wilkins, Chairman.
7. Report of the Executive Vice President, C. C. Long.

8. Report from the Arkansas Medical Political Action Committee, W. P. Phillips, Chairman.

The Reference Committee recommends acceptance of these reports for filing.

9. Report of the AMA Delegate, Purcell Smith.

The Committee wishes to give special recognition and appreciation to Purcell Smith for the outstanding service given over the years as delegate to the American Medical Association.

Dr. Smith was given a standing ovation by members of the House.

The report of Reference Committee Number Two was adopted by the House as presented.

#### REFERENCE COMMITTEE NUMBER THREE

**Richard Martin, Chairman**

Carl Williams of Fort Smith, E. K. Clardy of Hot Springs and Frank Westerfield of Little Rock served with me on Reference Committee Number Three. The committee held an open hearing on reports and resolutions referred to it for consideration. There were no controversial issues considered by the committee. We recommend approval of the following reports and resolutions as presented:

1. Committee on Public Health, Ben Saltzman, Chairman.
2. Committee on Mental Health, W. Payton Kolb, Chairman.
3. Eighth Councilor District and State Professional Relations Committees, Richard Logue, Chairman.
4. Ninth Councilor District Professional Relations Committee, Charles Ledbetter, Chairman.
5. Tenth Councilor District Professional Relations Committee, Samuel E. Landrum, Chairman.
6. Second District Councilors, Paul Gray and John Bell.
7. Fifth District Councilor, George W. Warren.
8. Report of the State Medical Board, Joe Verser, Secretary.
9. Summary of Arkansas State Health Department Activities, Rex Ramsay, Director.
10. Medical Education Foundation for Arkansas, Robert Watson, President.
11. Resolution from Councilor Charles Wilkins on Equitable Risk Classifications in Medical Liability Premiums.
12. Resolution from Sebastian County Medical Society on Ambulance Service Reimbursement.

Mr. Speaker, this concludes the report of your Reference Committee Number Three. I express thanks to those physicians who appeared before the committee and to the members of the com-

mittee. I move the adoption of the Report of Reference Committee Number Three.

Vice Speaker Phillips asked for a separate vote by the House on the two resolutions. Voting individually on each resolution, both were approved by the House. The House then approved the Report of Reference Committee Number Three.

Speaker Chudy called for the Report of the Council covering meetings held during the convention.

### REPORT OF THE COUNCIL

**John P. Burge, Chairman**

The Council met on Sunday, April 22, 1979, and conducted business as follows:

1. The new chancellor of the University of Arkansas for Medical Sciences, Harry Ward, was introduced to the Council. Dr. Ward expressed hope for a good working relationship with the medical profession of the state.
2. Bob Banister, president of the Arkansas State Board of Health, introduced the new director of the State Health Department, Robert Young. Dr. Young addressed the Council on some of the programs of the Health Department.
3. Approved the annual report of audit of the Society records.
4. Heard Richard Pearson report on the National Leadership Conference of the American Medical Association.
5. Received a progress report from the Ad Hoc Committee to Study the Organization of the Society and voted to refer the report to the House of Delegates.
6. Agreed to provide physicians as "Doctor of the Day" during the regular session of the Constitutional Convention, provided the medical consultation room at the Capitol is to be kept open and staffed by the State.
7. Approved a recommendation from the Public Relations Committee Chairman, Ray Jouett, that the Society cooperate with Burroughs Wellcome in a public health education program.
8. Went on record as inviting any and all companies writing malpractice insurance to come into the State of Arkansas and file for a certification of qualification before the Insurance Commissioner, and requesting that a representative of the American Physicians Insurance Exchange meet with the

Council at its first regular meeting following the Annual Session.

9. Voted to hold the 1983 annual meeting in Little Rock.
10. Requested that the Executive Committee direct implementation of separate smoking and non-smoking areas for all Society functions.
11. Directed that a representative of National Investors Life Insurance Company attend the next regular meeting of the Council to provide information on the provisions and funding of the retirement plan for Society employees.

The Council met on Monday, April 23, 1979, and transacted business as follows:

1. Approved requests for dues exemption as submitted by the component societies.
2. Approved re-appointment of Ernest Hartmann of El Dorado to the Arkansas State Arbitration Commission.
3. Selected W. P. Phillips of Fort Smith for appointment to a six-year term on the Board of Directors of Blue Cross-Blue Shield of Arkansas beginning in March 1980 and selected Charles F. Wilkins of Russellville for appointment to fill a vacancy created by the resignation of Robert McDonald.
4. Re-appointed Jean Gladden of Harrison to the Board of Directors of the Medical Education Foundation of Arkansas.
5. Selected the following for appointment to the Medical Services Review Committee:  
Family Practice: George Warren, Smackover, and Paul Wallick, Monticello.  
Internal Medicine: Jack L. Blackshear, Little Rock.  
Surgery: Donald Duncan, Texarkana.  
Neurosurgery: Ray Jouett, Little Rock.  
Psychiatry: Aubrey C. Smith, Little Rock.  
Urology: Frederick P. Feder, Fort Smith.

The Council met on Tuesday and reappointed John W. Vinzant of Fayetteville to the Arkansas State Arbitration Commission.

The Council met on Wednesday and selected the following for appointment to the Board of Directors of Ark-PAC:

W. P. Phillips, Fort Smith.  
Ken Lilly, Fort Smith.  
Raymond Biondo, North Little Rock.  
Payton Kolb, Little Rock.  
Jerry Mann, Arkadelphia.



Donald Duncan, Texarkana.  
F. E. Joyce, Texarkana.  
George W. Warren, Smackover.  
Bobby McKee, Jonesboro.  
Mrs. Kemal Kutait, Fort Smith.  
Mrs. Paul Cornell, Little Rock.  
Mrs. Charles Wilkins, Russellville.  
Mrs. John P. Burge, Lake Village.

The Council voted to leave one position on the Board to be filled at a later date after the nominating committee selects a physician representative from the east central part of the state.

E. L. Coffman of Fort Smith was appointed to represent Anesthesiology on the Medical Services Review Committee.

The Council voted to endorse the candidacy of W. Payton Kolb for a position on the Council on Constitution and By-Laws of the American Medical Association and to authorize expenditure of funds to promote his candidacy. The Council also recommended that the House endorse the candidacy of Dr. Kolb for the AMA Council position.

Upon motion of Dr. Burge, the report of the Council was approved by the House.

Raymond Irwin moved that the House give full support to Dr. Kolb in his candidacy. The House so voted.

The House approved the following nominations for vacancies on the Arkansas State Board of Health:

Third Congressional District: Ben N. Saltzman, A. C. Bradford and Rhys Williams.

Sixth Congressional District: John P. Burge, Paul Wallick and H. R. Harris.

The final meeting of the House of the 1979 convention adjourned at 12:00 noon.

### REORGANIZATIONAL MEETING OF THE COUNCIL

The Council of the Society met for a brief re-organizational meeting following adjournment of the House of Delegates. John P. Burge was re-elected chairman of the Council and Alfred Kahn, Jr., was re-elected Editor of the Journal of the Arkansas Medical Society.

The Council selected J. Larry Lawson of Paragould for appointment to the Board of Directors of Ark-PAC.



## SCIENTIFIC SESSIONS

The theme for the scientific program was "Let's Hear It From the Specialties." First Vice President Richard Pearson presided at the first general session. The program opened with a presentation entitled "The Hide in Seeking—Dermatology Update," by G. Thomas Jansen, Professor and Chairman of the Department of Dermatology, University of Arkansas College of Medicine. Norman E. Peterson, Assistant Director of the Department of Surgery and Division Chief of Urology at Denver General Hospital, spoke on "What's New and Useful in Urology."

The second general session presiding officer was Joe H. Lyford, Second Vice President. Kenneth P. Mathews, Professor of Internal Medicine, University of Michigan Medical School, Ann Arbor, presented a paper on "Drug Allergy." B. R. Alford, Professor and Chairman of the

Department of Otorhinolaryngology and Communicative Sciences at Baylor College of Medicine, discussed "Facial Reanimation." The session concluded with presentation of "Current Concepts of Total Hip and Knee Replacement Arthroplasty" by D. Bud Dickson of Little Rock.

Richard O. Martin, Third Vice President, presented the following scientific program for the last general session on Tuesday morning: "Knee-Joint Arthroscopy: Diagnosis and Treatment" by James S. Mulhollan, Little Rock; "Hyperirritability of Tissues is a Clinical Fact" by J. Blair Pace, Director of the Family Practice Residency Program at Santa Ana-Tustin Community Hospital; "Life Change Events and Disease" by Thomas H. Holmes, Department of Psychiatry, University of Washington, Seattle.

# SCIENTIFIC EXHIBITS

Forty exhibits by physicians and allied health organizations were displayed during the Annual Session. The Society expresses thanks to individuals who participated in the exhibits and added to the educational benefit of the meeting. Exhibitors were:

Joanna Seibert, M.D., and E. S. Golladay, Department of Radiology of the University of Arkansas College of Medicine, "Clinical and Radiographic Evaluation of Imperforate Anus — Determining the Type of Anorectal Anomaly in the Newborn."

Wilma Diner, M.D., Department of Radiology, University of Arkansas College of Medicine, "The Continent Ileostomy (Kock Pouch)."

Phillip L. Smith, M.D., Ernest J. Ferris, M.D., and William N. Lim, M.D., "Intravascular Manipulations in the Pediatric Patient."

James G. Stuckey, M. D., "Mammoplasty."

Florence Char, M.D., and Donald E. Hill, M.D., "Fetal Alcohol Syndrome — A Preventable Cause of Mental Retardation."

Samuel B. Thompson, M.D., John D. Christian, M.D., William L. Steele, M.D., Richard J. Nasca, M.D., and John G. Slater, Jr., M.D., "Evaluation of Acute Knee Injuries."

Jacob Amir, M.D., "Breast Cancer."

James F. Kyser, M.D., "Rhinoplasty."

Glen Baker, M.D., and Robin Jones, M.D., Department of Pathology, University of Arkansas College of Medicine, "Innovative Approaches to Teaching Pathology."

Albert Kalderon, M.D., Department of Pathology, University of Arkansas College of Medicine, "Recent Advances in Diagnosis of Renal Disease."

Jackson A. Smith, M.D., Department of Psychiatry, Loyola University, "The Collaborative Teaching of Human Sexuality."

Donald Leonard, M.D., "Rheumatoid Arthritis — A Systemic Disease."

Robert Siebert, M.D., Department of Otolaryngology, University of Arkansas College of Medicine, "The Role of Lip Adhesion in Cleft Lip Repair."

James Suen, M.D., Department of Laryngology, University of Arkansas College of Medicine, "Carcinoma of the Larynx."

James Adamson, M.D., Jerry Herron, M.D., and Nancy Rector, M.D., "Newer Aspects of Pulmonary Function Testing."

Donald I. Purcell, M.D., "Gallbladder Ultra Sound."

R. Sloan Wilson, M.D., James H. Landers, M.D., and T. D. I. Wilkes, "Retinal Holes and Detachment."

Ellery Gay, M. D., "Cosmetic Surgery in an Outpatient Surgery Clinic."

Robert Shannon, M.D., Department of Psychiatry, University of Arkansas College of Medicine.

Dan Chisholm, M.D., Joye Bornhoft, M.D., Jerry Calhoun, M. D., Freeda Blankenship, M.D., Department of Radiology, St. Vincent Infirmary, "Ultrasound at St. Vincent Infirmary."

Raymond Biondo, M.D., "Continuing Medical Education."

H. A. Ted Bailey, M.D., James J. Pappas, M.D., Ellery Gay, M.D., Robert N. McGrew, M.D., and Joe B. Colclasure, M.D., "Outpatient Surgery Center: Improving Delivery of Otolaryngological Surgical Care."

W. Turner Harris, M.D., and Jerry L. Prather, M.D., "Evaluation of Bone Viability by Utilizing Bone Scanning Techniques."

Arkansas Speech and Hearing Association, "Speech and Hearing Service."

Arkansas Foundation for Medical Care, "PSRO."

Area Health Education Center Program, "AHEC."

Arkansas Society to Prevent Blindness, K. W. Cosgrove, M.D., Medical Director, "Diabetic Retinopathy."

Arthritis Foundation, "Arthritis Foundation Information for Physician and Patient."

Arkansas Occupational Therapy Association.

Arkansas Office on Alcohol and Drug Abuse Prevention.

Arkansas Rehabilitation Institute, Central Baptist Hospital, "Comprehensive Pulmonary Rehabilitation Program."

Social Security Disability Office, "Disability Evaluation Under Social Security."

Arkansas Epilepsy Society.



## RELATED MEETINGS

The Arkansas Society of Anesthesiologists met on Friday evening preceding the Annual Session. Stephen Slogoff was guest speaker for the dinner meeting at the Sam Peck Hotel.

The Alan Cazort Allergy Society of Arkansas held a dinner meeting at Coy's on Monday evening of the convention. Kenneth Mathews of Ann Arbor was guest speaker.

The Ophthalmology Section met at 9:00 a.m. on Tuesday. Scientific lectures were by Harold Beasley, F. Hampton Roy, Ken Augsburger, and Richard McDougall. J. J. Magie of Conway was elected president and J. Mayne Parker of Little Rock was elected secretary-treasurer for the Arkansas Ophthalmological Society.

The Otolaryngology Section met at 11:00 a.m. on Tuesday for a scientific program presented by B. R. Alford of Houston. Joe Colclasure of Little Rock is the new president of the section and Robert V. Borg of Hot Springs is secretary-treasurer.

The Arkansas Academy of Family Physicians held a luncheon meeting on Tuesday with J. Blair Pace of Santa Ana as guest speaker.

The Arkansas Chapter of the American Academy of Pediatrics held a luncheon meeting on Tuesday. The program was on the American Academy's "Speak Up for Children" program as part of the observance of the International Year of the Child.

The Arkansas Chapter of the American College of Surgeons met on Tuesday for a luncheon and program. Joe Crumpler of Russellville presented a program on "Cost Containment in Sur-

gical Practice."

The Neurosurgery Section of the Arkansas Medical Society held a luncheon meeting on Tuesday. James Arthur, resident in Neurosurgery, presented a review of recent experiences with seventy-five carotid endarterectomies at the Veterans Administration Hospital.

The Arkansas Orthopaedic Society met on Tuesday for a luncheon business meeting. James Arnold of Fayetteville is the new president of the group and Carl Nelson of Little Rock is the new secretary-treasurer.

The Arkansas Society of Internal Medicine held a luncheon meeting on Tuesday for a program on health care reimbursement. William R. Felts of Washington, D. C., was a program speaker. George K. Mitchell and Jack L. Blackshear also participated in the program. At the business meeting, John Crenshaw of Pine Bluff was named president of the group and Jack L. Blackshear of Little Rock was designated secretary-treasurer.

The Arkansas Society of Pathologists held a luncheon business meeting on Tuesday. Douglas E. Young of Little Rock is president of the group and Gerald Stolz of Russellville is secretary-treasurer.

The Arkansas Urological Society had a luncheon meeting on Tuesday with Norman Peterson of Denver as guest speaker.

The Arkansas Psychiatric Society met on Tuesday afternoon at 2:00 p.m. for a scientific session with Thomas H. Holmes of Seattle as guest speaker.



## OTHER ACTIVITIES

### PRAYER BREAKFAST

A Prayer Breakfast for all members of the Society and Auxiliary was held on Tuesday, April 24. The breakfast was sponsored by the Committee on Medicine and Religion of the Society, Milton Deneke, chairman. Gabe Payne of Hopkinsville, Kentucky, was speaker at the breakfast.

### MEMORIAL SERVICE

A Society-Auxiliary Memorial Service was held

at 1:00 p.m. on Sunday, April 22, with Society President George F. Wynne presiding.

President Wynne read the following names of members of the Society who had died since the 1978 meeting:

- Dr. T. L. Adair, Bald Knob.
- Dr. W. W. Biggs, Helena.
- Dr. H. L. Boyer, Lincoln.
- Dr. W. H. Calaway, Batesville.

Dr. William W. Childs, Little Rock.  
 Dr. Noel W. Cowan, Texarkana.  
 Dr. Harley C. Darnall, Fort Smith.  
 Dr. Joseph H. Downs, Nashville.  
 Dr. Ellis Gardner, Russellville.  
 Dr. L. J. Harrell, Prescott.  
 Dr. M. C. Hawkins, Jr., Searcy.  
 Dr. Martin F. Heidgen, Little Rock.  
 Dr. Paul G. Henley, El Dorado.  
 Dr. Herbert H. Hollis, Forrest City.  
 Dr. Miles F. Kelly, Sheridan.  
 Dr. Jerome S. Levy, Little Rock.  
 Dr. Jud B. Martindale, Hope.  
 Dr. John W. Morris, McCrory.  
 Dr. Ewing M. Nixon, Little Rock.  
 Dr. William S. Orr, Jr., Little Rock.  
 Dr. Nils C. Pehrson, Little Rock.  
 Dr. J. H. Pinson, Jr., El Dorado.  
 Dr. E. J. Ritchie, North Little Rock.  
 Dr. Friedman Sisco, Springdale.  
 Dr. Charles M. Smith, Paris.  
 Dr. John W. Smith, Little Rock.  
 Dr. John H. Wesson, Hashville.  
 Dr. Merle Woods, Hackett.  
 Dr. James J. Wyllie, Pocahontas.

Mrs. Walter Mizell, President of the Auxiliary, read the following list of names of Auxiliary members:

Mrs. Jack Barnwell, Cabot.  
 Mrs. L. F. Barrier, Little Rock.  
 Mrs. Morgan C. Berry, Little Italy.  
 Mrs. George Bridges, Paragould.  
 Mrs. Louis A. Draeger, Danville.  
 Mrs. George B. Fletcher, Hot Springs.  
 Mrs. J. Harry Hayes, Sr., Little Rock.  
 Mrs. W. C. Hensley, Charleston.  
 Mrs. Samuel D. McGill, Camden.  
 Mrs. Jean Mayfield, El Dorado.  
 Mrs. William L. Newton, Smackover.  
 Mrs. W. C. Overstreet, Jonesboro.  
 Mrs. John E. Parsons, Jr., Little Rock.  
 Mrs. T. E. Rhine, Thornton.  
 Mrs. Allen R. Rozzell, Morrilton.  
 Mrs. Harold Short, Beebe.  
 Mrs. J. Brooks Tate, Texarkana.  
 Mrs. John K. Walker, Pine Bluff.  
 Mrs. Earl T. Williams, Conway.

"The Resurrection" by Curren was sung by Mrs. Paul Gray with Mrs. Jesse Young accompanying her.

Invocation and benediction were by Joe Norton of Little Rock, a past president of the Society.

W. Payton Kolb of Little Rock, immediate past president of the State Society, presented the Memorial Address as follows:

#### MEMORIAL ADDRESS

I knew and admired him for many years. When I visited in Topeka, Kansas, as a Resident in Psychiatry many years ago, Dr. Jesse Casey was the Director of the Veterans Administration Hospital there. He later went to Washington, D. C., as the Chief of Psychiatry for the Veterans Administration. It was always a pleasure to stop and chat with him on our infrequent meetings, usually at medical conventions.

This last May (1978) while attending a convention in Atlanta, Georgia, I had the delightful experience of talking to him one evening. He related to me an incident that had recently occurred to him which greatly affected his life. His story had just been published in "Psychiatric Annals" of May 1978. I recommend its reading.

Dr. Casey underwent a relatively minor surgical procedure in which succinylcholine chloride was used. He was one of those very few people with a deficiency of pseudocholinesterase which prevented the detoxification of the medication. For about six hours he lay totally paralyzed, unable to communicate in any way and yet completely conscious and aware of his surroundings. Not being sure of just what had happened to him and aware of the talk of those ministering to him, who thought he was unconscious, he naturally was frightened. Here are his own words, "The anxiety that I initially felt when I realized I was paralyzed had increased. I felt badly frightened, and this quickly increased to sheer terror. In fact, 'terror' is not nearly strong enough to describe my feelings."

As the hours passed, many thoughts crossed Dr. Casey's mind and eventually he came to the conclusion he was going to die. He stated that contrary to the popular idea, his whole life did not pass in front of him and he was surprised. Let me quote his own words again, "After what seemed an interminable time, the feeling of anxiety and terror began to abate. I was still convinced that I would not live, but the sensation of not being able to stand it went away. In its place came a feeling of calmness and a sense of overall peace. I did not experience any definite sense of depersonalization or detachment, as has been reported by others facing what they thought was imminent death. But the fear



and terror were gone, replaced by a feeling of serenity."

As he told me this story I was impressed with the way he emphasized the feeling of peace and serenity that came over him when he decided that death was imminent. Last month the Journal of the American Medical Association carried the notice that Dr. Casey had died last Fall several months after recovering from his experience.

I was sad and I grieved as I learned of his death because he was a friend, and yet I was comforted in remembering the story he told me. I realized that he had no fear of death and was able to approach death with a peace and calm that we have not expected by past tradition and custom.

Each year at this time we gather together to gain more knowledge, to continue and improve our organizations, and to fellowship in our common bond of medicine, all for the benefit of the patients. Each year as we convene we recognize there are physicians and auxiliary members who are no longer with us. It is good that we pause for a few minutes at this time to pay respect to them and to honor their memory for the good they have done for the ill of our state, for their communities, for their families, and for God.

It is good that we grieve for that is a natural reaction and brings all of us closer together. We can rejoice for them and for us that experiences as related by Dr. Casey and by many others in all forms of communication have taught us that death is not to be feared but looked upon with peace and serenity.

Nancy Byrd Turner has expressed it well in her poem, "Death is a Door."

Death is only an old door  
Set in a garden wall.  
On quiet hinges it gives at dusk,  
When the thrushes call.  
Along the lintel are green leaves,  
Beyond, the light lies still;  
Very weary and willing feet  
Go over that sill.  
There is nothing to trouble any heart,  
Nothing to hurt at all.  
Death is only an old door  
In a garden wall.

As we remember those of our memberships who have died we think back on their lives and honor them for the lives they have lived. The

physician and his or her family live lives of service and sacrifice unique in our society. There are few that assume such responsibility and render such service to relieve the suffering of all. For this reason the words of Paul in his letter to Timothy when facing his own death become meaningful. "For I am now ready to be offered, and the time of my departure is at hand. I have fought a good fight. I have finished my course. I have kept the faith."

To best honor our dead we must look at their lives and dedicate our lives again to continue the great traditions of service that they have left for us. Longfellow in his "Psalm of Life" has expressed it well.

"Lives of great men all remind us  
We can make our lives sublime,  
And, departing, leave behind us  
Footprints, on the sands of time;—  
Footprints, that perhaps another  
Sailing o'er life's solemn main,  
A forlorn and shipwrecked brother,  
Seeing, shall take heart again."

Yes, our beloved dead have left us a heritage and with that heritage they are a part of us and we are a part of them. We thank God for them, for the lives they have lived, the service they have rendered, and the love they have given us.

"How living are the dead!  
Enshrined, but not apart,  
How safe within the heart  
We hold them still — our dead,  
Whatever else be fled!  
Our constancy is deep  
Toward those who lie asleep  
Forgetful of the strain and mortal strife  
That are so large a part of this,  
our earthly life.  
They are our very own —  
From them — from them alone  
Nothing can us estrange  
Nor blight autumnal, no,  
nor wintry change.  
The midnight moments keep a place  
for them  
And though we wake to weep  
They are beside us still in joy, in pain —  
In every crucial hour, they come again  
Angelic from above —  
Bearing the gifts of blessing and of love  
Until the shadowy path, they lonely trod



# FIFTY YEAR CLUB



Present for the breakfast meeting of the Fifty Year Club were Eva Dodge, Little Rock, and C. W. Jones, Sr., Benton (seated) and (standing, left to right) L. L. Hubener of Blytheville, John F. Guenthner of Mountain Home, Raymond Cook of Little Rock, Wallace Dickinson of DeQueen, M. A. Baltz of Pocahontas, and G. Allen Robinson of Harrison.

Becomes for us a bridge,  
That upwards leads to God."

Florence Earle Coates — "Immortal"

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1. Casey, Jesse F., M.D., "A Psychiatrist's Experience of Terror," "Psychiatric Annals," May 1978, Vol. 8, Number 5, 76-80.
2. Turner, Nancy Byrd, "Death is a Door," "Sunrise to Starlight," New York: Abington Press, 1966.
3. Paul, "Holy Bible," II Timothy, Chapter 4; Verses 6-7.
4. Longfellow, Henry Wadsworth, "The Psalm of Life," 960, Verses 7-8, "Masterpieces of Religious Verse," New York: Harper and Brothers Publishers, 1978.
5. Coates, Florence Earle, "Immortal," *Ibid*.

## PAST PRESIDENTS

The past presidents of the Society were guests at a breakfast on Wednesday morning of the convention. Present were T. D. Brown of Little Rock, John Wood of Mena, Stanley Applegate of Springdale, Ross Fowler of Harrison, J. W. Kennedy of Arkadelphia, Joe Norton of Little Rock, A. S. Koenig of Fort Smith, Robert Watson of Little Rock, Ben Saltzman of Little Rock, W. Payton Kolb of Little Rock, and George F. Wynne of Warren.

## FIFTY YEAR CLUB

Members of the Fifty Year Club of the Arkansas Medical Society were honored at a break-



Eva Dodge of Little Rock has served as secretary of the Fifty Year Club for the past two years and C. W. Jones, Sr., of Benton has served as president.



last meeting on Wednesday. For the past year Curtis W. Jones, Sr., has served as president of the Club and Eva F. Dodge of Little Rock was secretary.

Welcomed to Club membership were Raymond C. Cook of Little Rock, M. A. Baltz of Pocahontas, G. Wallace Dickinson of DeQueen, and L. L. Hubener of Blytheville. Other members present were John F. Guenther of Mountain Home, G. Allen Robinson of Harrison, Dr. Jones, and Dr. Dodge.

Eva Dodge was elected president of the club for the coming year and G. Allen Robinson was named secretary.

#### **COUNCIL RECEPTION**

Attendance was good at a reception hosted by the Council on Sunday evening for all members of the Society and their guests.

The reception is hosted by the Society to give members a better opportunity to visit with their officers and to enjoy fellowship of the Society.

#### **BLUE CROSS-BLUE SHIELD PARTY**

Blue Cross-Blue Shield of Arkansas again was host for a party on Monday evening of the convention. George Mitchell, president, and members of his staff were on hand to provide hospitality to members of the Society. The Society expresses appreciation to Dr. Mitchell and Blue Cross-Blue Shield for the party.

#### **INAUGURAL BANQUET**

President George F. Wynne served as master of ceremonies for the President's Banquet on Tuesday evening of the convention. Invocation was by W. Payton Kolb.

Seated at the head table for the banquet were President and Mrs. Wynne, President-elect A. E. Andrews and Mrs. Andrews, Secretary Elvin Shuffield and Mrs. Shuffield, Chairman of the Council John P. Burge and Mrs. Burge, Chairman of the Convention Committee Ken Lilly and Mrs. Lilly, and President Wynne's State Representative, Mr. John Lipton and Mrs. Lipton.

President Wynne introduced the following special guests present:

Roger Busfield, Executive Director of the Arkansas Hospital Association.

George K. Mitchell, President of Blue Cross-Blue Shield, and Mrs. Mitchell.

Mrs. Walter Mizell, Immediate Past President of the Arkansas Medical Society Auxiliary.

Mrs. Frank Morgan, President of the Arkansas Medical Society Auxiliary.

Mrs. Warren Boop, President-elect of the State Auxiliary.

Mrs. Baxter Troutman, Lenoir, North Carolina, President of the Auxiliary to the Southern Medical Association.

President Wynne introduced members of his family who were present:

His daughter, Marianna, and her husband, Stark Ligon.

His daughter, Matilda, and her husband, Tom James.

His twin brother, Frank Wynne, and his wife.

His wife's parents, Judge and Mrs. Ed F. McFaddin.

His brother-in-law and sister-in-law, Cotton and Mary Ross Thomas.

His niece and nephew, Lindsey and Mary Thomas.

President Wynne also introduced Mike Mitchell and Bob Cearley, who serve with Eugene Warren as legal counsel for the Society.

Dr. Wynne expressed thanks to the membership for the privilege of having served as president for 1978-79. He expressed appreciation to his committees for their work and to the membership for their participation during a very active year.

Past presidents of the Society who were present were recognized by Dr. Wynne. They were W. Payton Kolb of Little Rock, A. S. Koenig, Jr., of Fort Smith, Ben N. Saltzman of Little Rock, John P. Wood of Mena, Robert Watson of Little Rock, Stanley Applegate of Springdale, Jack W. Kennedy of Arkadelphia, Ross Fowler of Harrison, H. W. Thomas of Dermott, Joseph A. Norton of Little Rock, Joe Verser of Harrisburg, and T. Duel Brown of Little Rock.

Dr. Wynne administered the oath of office to A. E. Andrews of Texarkana and presented to Dr. Andrews a gavel as a symbol of the office of the President of the Arkansas Medical Society.

Dr. Andrews addressed the membership assembled, thanking them for the honor of serving as president of the Society. He encouraged members of the Society to work together during the coming year toward the goals of the Society and he stressed the importance of nurturing the individual physician-patient relationship. He em-

phasized the fact that whatever the members do as a Society, they are ultimately working for the good of the patient. He urged the membership to unite for the good of the profession, giving less consideration to specialty and location.

Dr. Andrews introduced members of his family who were present: daughter Helen Pounds of Houston, Jennifer Andrews of Denton, and

David Andrews of Nacogdoches. Also introduced were Dr. and Mrs. C. F. Beckett, neighbors from Texarkana who were special guests at the banquet.

Dr. Andrews introduced the Northeast High School Chorale of North Little Rock, directed by Mr. Bill Barnett. The singers presented an outstanding musical program.

# OFFICERS OF THE ARKANSAS MEDICAL SOCIETY 1979-1980

President	A. E. Andrews, P. O. Box 689, Texarkana 75501
President-elect	Kemal Kutait, 1120 Lexington, Fort Smith 72901
First Vice President	Paul Cornell, 500 S. University, Little Rock 72205
Second Vice President	Richard O. Martin, P. O. Box 339, Paragould 72450
Third Vice President	Annette V. Landrum, P. O. Box 1684, Fort Smith 72902
Secretary	Elvin Shuffield, 110 Doctors Park Bldg., Little Rock 72205
Treasurer	Kenneth R. Duzan, 443 West Oak, El Dorado 71730
Speaker, House of Delegates	Amail Chudy, 1801 Maple, North Little Rock 72114
Vice Speaker of House	W. P. Phillips, P. O. Box 3507, Fort Smith 72913
Journal Editor	Alfred Kahn, Jr., 1300 West Sixth, Little Rock 72201
Delegates to AMA: 1979	Purcell Smith, P. O. Box 5675, Little Rock 72215
1979-80	Joe Verser, P. O. Box 106, Harrisburg 72432
1980-81	T. E. Townsend, 1420 West 43rd, Pine Bluff 71603
Alternates: 1979	T. E. Townsend, 1420 West 43rd, Pine Bluff 71603
1979-80	A. E. Andrews, P. O. Box 689, Texarkana 75501
1980-81	Richard Pearson, 1223 West Walnut, Rogers 72756
Executive Vice President	C. C. Long, P. O. Box 1208, Fort Smith 72902

# EXECUTIVE COMMITTEE OF THE COUNCIL

Chairman of the Council	John P. Burge, Lake Village Clinic, Lake Village 71653
President	A. E. Andrews, P. O. Box 689, Texarkana 75501
President-elect	Kemal Kutait, 1120 Lexington, Fort Smith 72901
Secretary	Elvin Shuffield, 110 Doctors Park Bldg., Little Rock 72205

# COUNCILORS

District	Councilor Term Expires 1980	Councilor Term Expires 1981	Counties in District
1.	Asa A. Crow #1 Medical Drive Paragould 72450	*Merrill J. Osborne 527 N. 6th Blytheville 72315	Clay, Craighead, Crittenden, Fulton, Greene, Lawrence, Mississippi, Poinsett, Randolph, and Sharp.
2.	John E. Bell 1300 South Main Searcy 72143	*Paul Gray P. O. Box 2437 Batesville 72501	Cleburne, Conway, Faulkner, Independence, Izard, Jackson, Stone, and White.
3.	*L. J. P. Bell 626 Poplar Helena 72342	John Hestir P. O. Drawer 512 DeWitt 72042	Arkansas, Cross, Lee, Lonoke, Monroe, Phillips, Prairie, St. Francis, and Woodruff.
4.	John P. Burge Lake Village Clinic Lake Village 71653	*Raymond Irwin 1220 West 42nd Pine Bluff 71603	Ashley, Chicot, Desha, Drew, Jefferson, and Lincoln.
5.	*J. B. Jameson, Jr. P. O. Box 994 Camden 71701	George Warren P. O. Box W Smackover 71762	Bradley, Calhoun, Cleveland, Columbia, Dallas, Ouachita, and Union.



# PROCEEDINGS

6.	*C. Lynn Harris P. O. Box 687 Hope 71801	Donald L. Duncan P. O. Box 778 Texarkana 75501	Hempstead, Howard, Lafayette, Little River, Miller, Nevada, Pike, Polk, and Sevier.
7.	*Robert F. McCrary 505 West Grand Hot Springs 71901	R. Jerry Mann 416 Main Street Arkadelphia 71923	Clark, Garland, Grant, Hot Spring, Montgomery, and Saline.
8.	William N. Jones 500 S. University Little Rock 72205	*W. Ray Jonett 750 Med. Towers Bldg. Little Rock 72205	Pulaski.
9.	Rhys A. Williams P. O. Box 1118 Harrison 72601	*Morriss M. Henry P. O. Box 1727 Fayetteville 72701	Baxter, Benton, Boone, Carroll, Madison, Marion, Newton, Searcy, Van Buren, and Washington.
10.	Ken Lilly 1120 Lexington Fort Smith 72901	*Charles F. Wilkins 3105 West Main Place Russellville 72801	Crawford, Franklin, Johnson, Logan, Perry, Pope, Scott, Sebastian, and Yell.

\*Senior Councilor.

## 1979 OFFICERS—COUNTY MEDICAL SOCIETIES—ARKANSAS MEDICAL SOCIETY

ARKANSAS	Pres.—Carl E. Northcutt, Route 1, Box 21-D, Stuttgart 72160 Secy.—Carl E. Northcutt, Route 1, Box 21-D, Stuttgart 72160
ASHLEY	Pres.—Donald L. Toon, 315 Alabama, Crossett 71635 Secy.—James D. Rankin, P. O. Box 232, Hamburg 71646
BAXTER	Pres.—James S. Beckman, P. O. Box 276, Mountain Home 72653 Secy.—Thomas L. Eans, 126 West 6th, Mountain Home 72653 Asst. Secy.—Lois Bayless, 126 West 6th, Mountain Home 72653
BENTON	Pres.—James H. Arkins, P. O. Box 420, Bentonville 72712 Secy.—Jan Turley, 1217 West Walnut, Rogers 72756
BOONE	Pres.—Richard Kuharich, 651 North Spring, Harrison 72601 Secy.—Sue R. Chambers, Bower at Pine, Harrison 72601
BRADLEY	Pres.—W. C. Whaley, Jr., 205 East Church, Warren 71671 Secy.—Merl T. Crow, 205 East Church, Warren 71671
CHICOT	Pres.—W. J. Weaver, P. O. Box Q, Eudora 71640 Secy.—Major E. Smith, P. O. Box 310, Dermott 71638
CLARK	Pres.—Eli Gary, P. O. Box 475, Arkadelphia 71923 Secy.—George R. Peeples, 305 East Main, Gurdon 71743
CLEBURNE	Pres.—Joe B. Scruggs, P. O. Box 510, Heber Springs 72543 Secy.—H. L. Cranford, 105 North 6th, Heber Springs 72543
COLUMBIA	Pres.—Thomas Pullig, 805 North Jackson, Magnolia 71753 Secy.—Robert W. Hunter, 2602 Crestview, Magnolia 71753
CONWAY	Pres.—Allen R. Rozzell, 601 South Moose, Morrilton 72110 Secy.—Keith Lipsmeyer, P. O. Box 677, Morrilton 72110
CRAIGHEAD-POINSETT	Pres.—Clarence E. Gossett, 505 East Matthews, Jonesboro 72401 Secy.—Ray H. Hall, 311 East Matthews, Jonesboro 72401
CRAWFORD	Pres.—L. Gordon Sasser, III, P. O. Box 478, Alma 72921 Secy.—F. E. Shearer, P. O. Box 458, Alma 72921
CRITTENDEN	Pres.—William J. Wright, 1605 Second Street, Earle 72331 Secy.—Sidney W. Arnold, 228 Tyler, Suite 200, West Memphis 72301 Treas.—Keith B. Kennedy, P. O. Box 489, West Memphis 72301
CROSS	Pres.—Robert Bethell, P. O. Box 158, Wynne 72396 Secy.—Vance J. Crain, P. O. Box 158, Wynne 72396
DALLAS	Pres.—John H. Delamore, P. O. Box 351, Fordyce 71742 Secy.—Hugh Nutt, P. O. Box 506, Fordyce 71742
DESHA	Pres.—Guy U. Robinson, 207 South Elm, Dumas 71639 Secy.—H. R. Harris, 207 South Elm, Dumas 71639
DREW	Pres.—Harold F. Wilson, P. O. Box 660, Monticello 71655 Secy.—A. K. Busby, 733 Doctors Drive, Monticello 71655 Asst. Secy.—Betty Evans, P. O. Box 538, Monticello 71655

# PROCEEDINGS

FAULKNER .....	Pres.—Bob G. Banister, 923 Parkway, Conway 72032 Secy.—Leslie H. Sessions, 923 Parkway, Conway 72032
FRANKLIN .....	Pres.—David L. Gibbons, P. O. Box 136, Ozark 72949 Secy.—Rebecca P. Ewing, 604 West Commercial, Ozark 72949
GARLAND .....	Pres.—J. Richard Gardial, 125 Greenwood, Hot Springs 71901 Secy.—John B. Simpson, 1705 Central, Hot Springs 71901 Asst. Secy.—Mary Payne, 901 West Grand, Hot Springs 71901
GRANT .....	Pres.—Clyde D. Paulk, P. O. Box 307, Sheridan 72150 Secy.—Clyde D. Paulk, P. O. Box 307, Sheridan 72150
GREENE-CLAY .....	Pres.—John R. Sellars, #1 Medical Drive, Paragould 72450 Secy.—J. D. Bonner, 1015 West Kingshighway, Paragould 72450
HEMPSTEAD .....	Pres.—C. Lynn Harris, P. O. Box 687, Hope 71801 Secy.—Jim McKenzie, P. O. Box 687, Hope 71801
HOT SPRING .....	Pres.—Robert H. White, 1004 Dyer, Malvern 72104 Secy.—John A. Vaughan, 115 East Highland, Malvern 72104
HOWARD-PIKE .....	Pres.—Joe D. King, P. O. Box 549, Nashville 71852 Secy.—Samuel W. Peebles, 120 West Sybert, Nashville 71852
INDEPENDENCE .....	Pres.—Paul J. Baxley, P. O. Box 2116, Batesville 72501 Secy.—Dennis Davidson, P. O. Box 2116, Batesville 72501
JACKSON .....	Pres.—(Vacancy) Secy.—John D. Ashley, Jr., 2nd & Laurel, Newport 72112
JEFFERSON .....	Pres.—John W. Buckley, 1408 W. 43rd, Pine Bluff 71603 Secy.—Robert R. Gullett, 1714 Doctors Drive, Pine Bluff 71603 Asst. Secy.—Ann Wilson, 1515 W. 42nd, Pine Bluff 71603
JOHNSON .....	Pres.—D. H. Pennington, P. O. Box 668, Clarksville 72830 Secy.—George W. Taylor, P. O. Box 668, Clarksville 72830
LAFAYETTE .....	Pres.—Willie J. Lee, P. O. Box 276, Stamps 71860 Secy.—Craig E. Ditsch, P. O. Box 276, Stamps 71860
LAWRENCE .....	Pres.—Ted Lancaster, P. O. Box 150, Walnut Ridge 72476 Secy.—J. B. Elders, 321 S.W. 3rd, Walnut Ridge 72476
LEE .....	Pres.—E. C. Fields, 77 West Main, Marianna 72360 Secy.—E. C. Fields, 77 West Main, Marianna 72360
LINCOLN .....	Pres.—James W. Freeland, P. O. Box 159, Star City 71667 Secy.—James W. Freeland, P. O. Box 159, Star City 71667
LITTLE RIVER .....	Pres.—Joe G. Shelton, Jr., P. O. Box 397, Ashdown 71822 Secy.—James D. Armstrong, P. O. Box 397, Ashdown 71822
LOGAN .....	Pres.—William R. Daniel, 114 West 4th, Booneville 72927 Secy.—James T. Smith, P. O. Box 286, Paris 72855
LONOKE .....	Pres.—Willie Harris, P. O. Box 40, England 72046 Secy.—B. E. Holmes, 305 West Front, Lonoke 72086
MILLER .....	Pres.—Arnett D. Smith, P. O. Box 1409, Texarkana 75501 Secy.—R. S. McGinnis, Sr., P. O. Box 1409, Texarkana 75501 Exec. Secy.—Arlene Rushan, P. O. Box 1843, Texarkana 75501
MISSISSIPPI .....	Pres.—R. Scott Fergus, Professional Building, Osceola 72370 Secy.—Eldon Fairley, P. O. Box 68, Osceola 72370
MONROE .....	Pres.—N. C. David, Jr., 108 West Ash, Brinkley 72021 Secy.—J. P. Williams, Jr., 127 S. New Orleans, Brinkley 72021
NEVADA .....	Pres.—Richard P. Portis, P. O. Box 442, Prescott 71857 Secy.—Michael C. Young, P. O. Box 442, Prescott 71857
OUACHITA .....	Pres.—Richard Plant, P. O. Box 762, Camden 71701 Secy.—L. V. Ozment, 353 Cash Road, Camden 71701
PHILLIPS .....	Pres.—A. A. Berger, 801 Perry, Helena 72342 Secy.—Henry N. Faulkner, 513 Porter, Helena 72342
POLK .....	Pres.—David P. Hefner, 518 Janssen, Mena 71953 Secy.—Henry N. Rogers, 600 West 7th Street, Mena 71953
POPE .....	Pres.—S. D. Teeter, 3105 West Main Place, Russellville 72801 Secy.—W. E. King, 3105 West Main Place, Russellville 72801



## PROCEEDINGS

PULASKI .....	Pres.—Paul Cornell, 500 S. University, #413, Little Rock 72205 Secy.—Kelsy J. Caplinger, III, P. O. Box 5675, Little Rock 72215 Exec. Secy.—Paul Harris, 500 S. University, #311, Little Rock 72205
RANDOLPH .....	Pres.—Hal S. Barre, P. O. Box 585, Pocahontas 72455 Secy.—Thomas B. DeClerk, 204 Thomasville, Pocahontas 72455
SALINE .....	Pres.—David L. Stewart, P. O. Box 399, Benton 72015 Secy.—Robert A. Council, Jr., 910 N. East, Benton 72015
SCOTT .....	Pres.—Harold B. Wright, P. O. Box 249, Waldron 72958 Secy.—Harold B. Wright, P. O. Box 249, Waldron 72958
SEBASTIAN .....	Pres.—R. C. Goodman, 1500 Dodson, Fort Smith 72901 Secy.—Archie Hewett, 600 South 14th, Fort Smith 72901 Asst. Secy.—Mrs. Betty Stipsky, P. O. Box 3528, Fort Smith 72913
SEVIER .....	Pres.—Curtis Williams, Medical Arts Building, DeQueen 71832 Secy.—J. Frank Daniel, DeQueen Clinic, DeQueen 71832 Exec. Secy.—Jim E. Pearce, Highway 70 West, DeQueen 71832
ST. FRANCIS .....	Pres.—J. Neal Laney, 1740 Lindauer Road, Forrest City 72335 Secy.—Brian Hawley, P. O. Box 4000, Forrest City 72335
UNION .....	Pres.—James B. Weedman, 714 W. Faulkner, El Dorado 71730 Secy.—R. Duke Jennings, 443 W. Oak, El Dorado 71730
VAN BUREN .....	Pres.—C. G. Pearce, P. O. Box 51, Clinton 72031 Secy.—John A. Hall, P. O. Box 310, Clinton 72031
WASHINGTON .....	Pres.—Tom Whiting, 803 Quandt, Springdale 72764 Secy.—Murray Harris, P. O. Box 1286, Fayetteville 72701
WHITE .....	Pres.—James H. Golleher, P. O. Box 1128, Searcy 72143 Secy.—Hugh R. Edwards, 1300 South Main, Searcy 72143
WOODRUFF .....	Pres.—Fred Wilson, P. O. Box 596, McCrory 72101 Secy.—James Rowe, P. O. Box 387, McCrory 72101
YELL .....	Pres.—Rogers P. Edmondson, P. O. Box 487, Danville 72833 Secy.—Damon G. H. Martin, P. O. Box 328, Ola 72853

## COMMITTEES—ARKANSAS MEDICAL SOCIETY—1979-1980

	Term Expires		Term Expires
COMMITTEE ON CANCER CONTROL		John E. Bell, 1300 South Main, Searcy 72143	1982
David L. Barclay, 500 South University, Little Rock 72205	1980	Frederick E. Joyce, P. O. Box 2763, Texarkana 75503	1982
John R. Broadwater, 1500 Dodson, Fort Smith 72901	1980		
Wayne H. Schultz, P. O. Box 1998, El Dorado 71730	1981	SUB-COMMITTEE ON NATIONAL LEGISLATION	
Herbert B. Wren, P. O. Box 1409, Texarkana 75501 — <i>CHAIRMAN</i>	1982	W. Payton Kolb, 230 Medical Towers Building, Little Rock 72205	1980
Jean C. Gladden, P. O. Box 1118, Harrison 72601	1982	T. Dale Alford, 5700 West Markham, Little Rock 72205	1980
		Richard N. Pearson, 1223 West Walnut, Rogers 72756	1981
COMMITTEE ON MEDICAL LEGISLATION		James M. Kolb, Jr., 305 Skyline Drive, Russellville 72801	1981
Morris M. Henry, P. O. Box 1727, Fayetteville 72701	1980	W. P. Phillips, P. O. Box 3507, Fort Smith 72913 — <i>CHAIRMAN</i>	1982
James L. Maupin, P. O. Box 337, Dardanelle 72834	1980		
Donald L. Toon, 315 North Alabama, Crossett 71635	1980	COMMITTEE ON PUBLIC HEALTH	
James R. Weber, P. O. Box 188, Jacksonville 72076 — <i>CHAIRMAN</i>	1981	Edgar J. Easley, 4815 West Markham, Little Rock 72205	1980
Joe Verser, P. O. Box 106, Harrisburg 72432	1981	Milton D. Deneke, P. O. Box 687, West Memphis 72301	1980
George W. Warren, P. O. Box W, Smackover 71762	1981	John W. Vinzant, 22 East Spring, Fayetteville 72701	1980
		William C. Whaley, Jr., 205 East Church, Warren 71671	1981

# PROCEEDINGS

	Term Expires		Term Expires
Wilbur G. Lawson, 207 East Dickson, Fayetteville 72701	1981	I. Leighton Millard, P. O. Box 5270, Little Rock 72215	1981
Ben Saltzman, 4301 West Markham, Slot 592, Little Rock 72201 — <i>CHAIRMAN</i>	1982	Howard Schwander, 320 Doctors Park Bldg., Little Rock 72205	1981
Ruth C. Steinkamp, 4815 West Markham, Little Rock 72205	1982	Henry W. Keisker, Jr., 505 East Matthews, Jonesboro 72101	1982
		Michael C. Reese, 1110 West Elm, Rogers 72756	1982
SUB-COMMITTEE ON MATERNAL AND CHILD WELFARE		COMMITTEE ON MENTAL HEALTH	
John W. Trieschmann, 236 Woodbine, Hot Springs 71901	1980	Henry G. Hearnberger, Jr., 4313 West Markham, Little Rock 72205	1980
D. B. Allen, 500 South University, Little Rock 72205	1980	Frank M. James, 3100 Apache Drive, Jonesboro 72101	1980
Virgil Hayden, 1706 West 42nd, Pine Bluff 71603	1981	Robert G. Carnahan, 4313 West Markham, Little Rock 72205	1981
E. A. Shaneyfelt, P. O. Box 630, Manila 72442 — <i>CHAIRMAN</i>	1982	W. Payton Kolb, 230 Medical Towers Bldg., Little Rock 72205 — <i>CHAIRMAN</i>	1981
SUB-COMMITTEE ON TUBERCULOSIS		William Joe James, P. O. Box 1019, Pine Bluff 71613	1981
John C. Schultz, 10001 Lile Drive, Little Rock 72205	1980	David D. Fried, Northside Shopping Center, Mena 71953	1982
Donald L. Miller, 1515 West 42nd, Pine Bluff 71603 — <i>CHAIRMAN</i>	1980	Randolph Murphy, 4313 West Markham, Little Rock 72205	1982
Jim C. Citty, 2900 Hawkins Drive, Searcy 72143	1981	Henry H. Good, 340 Parkview Medical Bldg., Little Rock 72205	1982
Lawrence C. Price, P. O. Box 3006, Fort Smith 72913	1981	IMMUNIZATION SUB-COMMITTEE	
Wade A. Hart, Tenth and Highland, Blytheville 72315	1982	Paul C. White, Jr., 4815 West Markham, Little Rock 72205	1980
Jerry R. Stewart, P. O. Box 3528, Fort Smith 72913	1982	Deane G. Baldwin, 500 South University, Little Rock 72205	1980
COMMITTEE ON AGING		Horace L. Green, 1420 West 43rd, Pine Bluff 71603	1981
John F. Guenther, 126 West Sixth, Mountain Home 72653	1980	Henry B. Rogers, 209 Thompson, El Dorado 71730	1981
John A. Baldrige, 3100 Apache Drive, Jonesboro 72401	1980	Daniel C. McKinney, 1420 West 43rd, Pine Bluff 71603	1981
Woodbridge Morris, 5326 West Markham, #13, Little Rock 72205	1981	Betty Lowe, 801 Wolfe Street, Little Rock 72201 — <i>CHAIRMAN</i>	1982
Chalmers S. Pool, 3925 North Lookout, Little Rock 72205 — <i>CHAIRMAN</i>	1982	Jon D. Hall, 300 East Sixth, Texarkana 75501	1982
Charles W. Bailey, P. O. Box 426, Greenwood 72936	1982	SUB-COMMITTEE ON TRAFFIC SAFETY	
SUB-COMMITTEE ON PHYSICAL FITNESS AND SCHOOL HEALTH		Guy U. Robinson, 207 South Elm, Dumas 71639	1980
John McCollough Smith, 4000 Woodlawn, Little Rock 72205	1980	James G. Stuckey, Jr., 500 South University, Little Rock 72205	1981
Francis M. Henderson, 1515 West 42nd, Pine Bluff 71603 — <i>CHAIRMAN</i>	1980	H. Austin Grimes, P. O. Box 5270, Little Rock 72215	1981
W. John Giller, Jr., 516 West Faulkner, El Dorado 71730	1981	Thomas A. Pullig, 805 North Jackson, Magnolia 71753	1981
Clarence E. Ballard, Jr., 250 Doctors Park Bldg., Little Rock 72205	1982	George V. Roberson, Jr., 1708 Doctors Drive, Pine Bluff 71603	1981
Rex N. Moore, P. O. Box 459, Jacksonville 72076	1982	Carl L. Williams, 522 South 16th, Fort Smith 72901 — <i>CHAIRMAN</i>	1982
SUB-COMMITTEE ON INDUSTRIAL HEALTH		SUB-COMMITTEE ON LIAISON WITH VOCATIONAL REHABILITATION	
Noel F. Ferguson, 707 North Vine, Harrison 72601	1980	J. Mayne Parker, 500 South University, Little Rock 72205	1980
Howard M. Armstrong, 340 Doctors Park Bldg., Little Rock 72205	1980	Robert D. Miller, Jr., 616 Elm Street, Helena 72342	1980



# PROCEEDINGS

	Term Expires		Term Expires
Jean C. Gladden, P. O. Box 1118, Harrison 72601	1980	SUB-COMMITTEE ON STATE HEALTH AND MEDICAL RESOURCES FOR CIVIL DEFENSE	
W. Ray Jouett, 750 Medical Towers Bldg., Little Rock 72205	1981	James T. Blackmon, 1008 Pine, Arkadelphia 71923	1980
Thomas M. Durham, Jr., 505 West Grand, Hot Springs 71901	1981	Robert M. Stainton, 300 East Roosevelt Road, Little Rock 72206	1980
John P. Wood, 907 Mena Street, Mena 71953 — <i>CHAIRMAN</i>	1982	Robert L. Kerr, P. O. Box 706, Mountain Home 72653	1980
COMMITTEE ON CONTINUING MEDICAL EDUCATION		L. Gordon Holt, 5326 West Markham, Little Rock 72205	1980
Lee B. Parker, Jr., 241 West Spring, Fayetteville 72701	1980	Alvin Strauss, Jr., 1026 Donaghey Building, Little Rock 72201	1981
Thomas A. Bruce, 4301 West Markham, Little Rock 72201	1980	Glenn V. Dalrymple, 1100 Medical Towers Bldg., Little Rock 72205 — <i>CHAIRMAN</i>	1982
Taylor Prewitt, P. O. Box 3528, Fort Smith 72913	1980	ADVISORY COMMITTEE TO THE MEDICAL ASSISTANTS SOCIETY	
Glenn P. Schoettle, 308 South Rhodes, West Memphis 72301	1981	T. E. Townsend, 1420 West 43rd, Pine Bluff 71603 — <i>CHAIRMAN</i>	1980
Gilbert Dean, 403 Donaghey Building, Little Rock 72201	1981	C. W. Jackson, P. O. Box C, Judsonia 72081	1980
John M. Hestir, P. O. Drawer 512, DeWitt 72042 — <i>CHAIRMAN</i>	1982	Jerry C. Holton, 500 South University, Little Rock 72205	1980
Jerry C. Holton, 500 South University, Little Rock 72205	1982	Jack J. Sternberg, 500 South University, Suite 725, Little Rock 72205	1982
COMMITTEE ON HOSPITALS		COMMITTEE ON INSURANCE	
Harold D. Purdy, 6924 Geyer Springs Road, Little Rock 72209	1980	Charles F. Wilkins, Jr., 3105 West Main Place, Russellville 72801	1980
Raymond A. Irwin, Jr., 1220 West 42nd, Pine Bluff 71603	1980	David D. Fried, Northside Shopping Center, Mena 71953	1980
Paul N. Means, 1150 Medical Towers Bldg., Little Rock 72205	1981	Harry Hayes, Jr., #1 St. Vincent Circle, Suite 310, Little Rock 72205	1981
John D. Wright, 321 Short Street, Benton 72015	1981	Banks Blackwell, 1400 West 43rd, Pine Bluff 71603 — <i>CHAIRMAN</i>	1981
Robert B. Benafield, P. O. Box 2181, Little Rock 72203	1982	Francis Wilson, 505 East Matthews, Jonesboro 72401	1982
G. Max Thorn, St. Vincent Infirmary, Little Rock 72201 — <i>CHAIRMAN</i>	1982	Guy Farris, 6213 Lee Avenue, Little Rock 72205	1982
COMMITTEE ON PUBLIC RELATIONS		COMMITTEE ON MEDICINE AND RELIGION	
Jimmie J. Magie, P. O. Box 1281, Conway 72032	1980	Fred O. Henker, III, 4301 West Markham, Little Rock 72201	1980
Nathan L. Poff, 401 West Searcy, Heber Springs 72543	1980	Orman W. Simmons, 310 Doctors Park Bldg., Little Rock 72205	1980
A. C. Bradford, P. O. Box 3528, Fort Smith 72913	1981	Lawson E. Glover, 10001 Lile Drive, Little Rock 72205	1981
W. Ray Jouett, 750 Medical Towers Bldg., Little Rock 72205	1981	Randolph Murphy, 4313 West Markham, Little Rock 72205	1981
G. Thomas Jansen, 500 South University, Little Rock 72205	1982	Kenneth Lilly, 1120 Lexington, Fort Smith 72901	1981
T. E. Townsend, 1420 West 43rd, Pine Bluff 71603	1982	Milton D. Deneke, P. O. Box 687, West Memphis 72301 — <i>CHAIRMAN</i>	1981
SUB-COMMITTEE ON LIAISON WITH THE AUXILIARY		Randolph Ellis, 1004 South Main, Malvern 72104	1982
Frank E. Morgan, 410 Pershing Boulevard, North Little Rock 72114 — <i>CHAIRMAN</i>	1980	Charles G. Swingle, P. O. Box 267, Marked Tree 72365	1982
Warren Boop, Jr., 4301 West Markham, Little Rock 72201	1980	COMMITTEE ON ARRANGEMENTS FOR ANNUAL SESSION	
Amail Chudy, 1801 Maple Street, Little Rock 72114	1980	R. W. Ross, 1120 Lexington, Fort Smith 72901	1980
C. Lynn Harris, P. O. Box 687, Hope 71801	1980	James A. Wellons, Jr., 350 Medical Towers Bldg., Little Rock 72205	1980

## PROCEEDINGS

	Term Expires
George H. Collier, Jr., P. O. Box 361, Paragould 72150	1980
Charles A. Taylor, P. O. Box 2116, Batesville 72501	1980
Thomas A. Bruce, 4301 West Markham, Little Rock 72201	1981
Neil H. Sims, 1301 West Markham, Little Rock 72201	1981
John H. Delamore, P. O. Box 351, Fordyce 71742	1981
Richard O. Martin, P. O. Box 339, Paragould 72450 — <i>CHAIRMAN</i>	1982
Kenneth Lilly, 1120 Lexington, Fort Smith 72901	1982
Larry Lawson, #1 Medical Drive, Paragould 72450	1982

## COUNCIL COMMITTEES

### PHYSICIAN-NURSE JOINT PRACTICE COMMITTEE

Jerry Holton, 500 South University,  
Little Rock 72205 — *CHAIRMAN*  
A. T. Gillespie, 500 South University,  
Little Rock 72205  
Charles E. Tommey, 412 North Washington,  
El Dorado 71730  
Kemal Kutait, 1120 Lexington,  
Fort Smith 72901

### COMMITTEE ON CONSTITUTIONAL REVISION

A. S. Koenig, Jr., 922 Lexington,  
Fort Smith 72901 — *CHAIRMAN*  
J. Warren Murry, 1749 North College, Box A,  
Fayetteville 72701  
Nathan L. Poff, 401 West Searcy,  
Heber Springs 72543

### BUDGET COMMITTEE

Kenneth Lilly, 1120 Lexington,  
Fort Smith 72901 — *CHAIRMAN*  
K. R. Duzan, 443 West Oak,  
El Dorado 71730  
William N. Jones, 500 South University,  
Little Rock 72205  
Rhys A. Williams, P. O. Box 1118,  
Harrison 72601  
Asa A. Crow, #1 Medical Drive,  
Paragould 72450

### LIAISON COMMITTEE WITH

### STATE HEALTH DEPARTMENT

(Composed of Executive Committee)

### COMMITTEE ON PHARMACY

Kelsy J. Caplinger, III, P. O. Box 5675,  
Little Rock 72215 — *CHAIRMAN*  
Boyce W. West, P. O. Box 220,  
Clarksville 72830

### MEDICAL SCHOOL COMMITTEE

James L. Gardner, 125 Greenwood,  
Hot Springs 71901 — *CHAIRMAN*

Kemal Kutait, 1120 Lexington,  
Fort Smith 72901  
Boyce West, P. O. Box 220,  
Clarksville 72830  
Max G. Cheney, 353 East Eighth,  
Mountain Home 72653  
R. Jerry Mann, 416 Main,  
Arkadelphia 71923

### PRIVATE INSURANCE REVIEW COMMITTEE

H. Austin Grimes, P. O. Box 5270,  
Little Rock 72215 — *CHAIRMAN*  
Rhys A. Williams, P. O. Box 1118,  
Harrison 72601  
Kemal Kutait, 1120 Lexington,  
Fort Smith 72901  
A. J. Thompson, #1 St. Vincent Circle,  
Little Rock 72205  
Raymond A. Irwin, Jr., 1220 West 42nd,  
Pine Bluff 71603

### AD HOC COMMITTEE ON LIAISON WITH HEALTH SYSTEMS AGENCIES

Kemal Kutait, 1120 Lexington,  
Fort Smith 72901 — *CHAIRMAN*  
John Crenshaw, 4201 Mulberry,  
Pine Bluff 71603  
William Joe James, P. O. Box 1019,  
Pine Bluff 71613  
James B. Kittrell, 1001 Main,  
Texarkana 75502  
James Guthrie, 353 Cash Road,  
Camden 71701  
Kenneth R. Duzan, 443 West Oak,  
El Dorado 71730  
Bob G. Banister, 923 Parkway,  
Conway 72032  
Roger B. Bost, 4301 West Markham, Slot 599,  
Little Rock 72201  
Warren M. Douglas, 260 Medical Towers Bldg.,  
Little Rock 72205  
Willie R. Harris, P. O. Box 40,  
England 72016  
W. Payton Kolb, 230 Medical Towers Bldg.,  
Little Rock 72205  
Gordon P. Oates, 1700 West 13th,  
Little Rock 72202  
James M. Stalker, P. O. Box 2575,  
Batesville 72501  
Robert E. Elliott, 1300 South Main,  
Searcy 72143  
Jean C. Gladden, P. O. Box 1118,  
Harrison 72601  
A. S. Koenig, Jr., 922 Lexington,  
Fort Smith 72901  
James L. Gardner, 125 Greenwood,  
Hot Springs 71901  
Don B. Vollman, 411 East Matthews,  
Jonesboro 72401

### REPRESENTATIVES TO THE COST CONTAINMENT COMMITTEE

W. Martin Eisele, 101 Whittington,  
Hot Springs 71901



James Weber, P. O. Box 188,  
Jacksonville 72076  
Glenn Dalrymple, 1100 Medical Towers Bldg.,  
Little Rock 72205

ORGANIZATIONAL STUDY COMMITTEE  
(BOONE COUNTY RESOLUTION)

Kemal Kutait, 1120 Lexington,  
Fort Smith 72901 — *CHAIRMAN*

T. E. Townsend, 1420 West 43rd,  
Pine Bluff 71603  
William N. Jones, 500 South University, Suite 708,  
Little Rock 72205  
Rhys A. Williams, P. O. Box 1118,  
Harrison 72601  
Paul Wallick, P. O. Box 660,  
Monticello 71655  
Forney G. Holt, 300 East Sixth,  
Texarkana 75501

# MEDICAL SERVICES REVIEW COMMITTEE

Term Expires	Committee Members (Name and Address)	Specialty Represented
April 30		
1981	James R. Weber, P. O. Box 188, Jacksonville 72076	Fam. Pr.
1982	George W. Warren, P. O. Box W, Smackover 71762	Fam. Pr.
1982	Paul A. Wallick, P. O. Box 660, Monticello 71655	Fam. Pr.
1981	Jack T. Fendley, 2500 McCain Place, North Little Rock 72116	Int. Med.
1982	Jack L. Blackshear, 650 Medical Towers Bldg., Little Rock 72205	Int. Med.
1981	Rhys A. Williams, P. O. Box 1118, Harrison 72601	Surgery
1980	J. Warren Murry, 1749 North College, Box A, Fayetteville 72701	Surgery
1982	Donald L. Duncan, P. O. Box 778, Texarkana, TX 75501	Surgery
1980	Bill F. Hefley, P. O. Box 5675, Little Rock 72215	Allergy
1982	Edwin L. Coffman, 1500 Dodson, Fort Smith 72901	Anes.
1980	Carl J. Raque, 500 South University, Little Rock 72205	Derm.
1980	Joe H. Lyford, Jr., P. O. Box 1107, Russellville 72801	Oph.
1980	Harry L. Rounsaville, 500 South University, Little Rock 72205	Oto.
1981	Robert F. McCrary, 505 West Grand, Hot Springs 71901	Ob-Gyn
1982	W. Ray Jouett, 750 Medical Towers Bldg., Little Rock 72205	Neurosurgery
1982	Aubrey C. Smith, 12115 Hinson Road, Little Rock 72212	Psychiatry
1981	Harry M. Harmon, 1114 Poplar Place, Rogers 72756	Pediatrics
1980	John E. Bell, 1300 South Main, Searcy 72143	Radiology

Term Expires	Committee Members (Name and Address)	Specialty Represented
April 30		
1981	Douglas E. Young, 9600 West 12th, Little Rock 72205	Pathology
1981	James H. Buie, 1500 Dodson, Fort Smith 72901	Orthopedics
1982	Frederick P. Feder, Jr., 720 Lexington, Fort Smith 72901	Urology
—	Charles F. Wilkins, Jr., 3105 W. Main Place, Russellville 72801	(Chairman)
—	A. E. Andrews, P. O. Box 689, Texarkana 75501	(President)
—	Kemal E. Kutait, 1120 Lexington, Fort Smith 72901	(President-elect)
—	Elvin Shuffield, 110 Doctors Park Bldg., Little Rock 72205	(Secretary)
—	John P. Burge, Lake Village Clinic, Lake Village 71653	(Council Chairman)

## Sub-Committee Representatives

(Representatives on call to meet with Committee as needed when claims in specialty field are considered)

Sub-Committee Representative	Sub-Specialty Represented
Carl L. Williams, 522 South 16th, Fort Smith 72901	Thoracic Surgery
T. J. Smith, 409 North University, Little Rock 72205	Gastroenterology
Thomas H. Allen, 413 North University, Little Rock 72205	Plastic Surgery
John C. Schultz, 10001 Lile Drive, Little Rock 72205	Pulmonary Dis.
Kelsy J. Caplinger, III, P. O. Box 5675, Little Rock 72215	Pediatric Allergy
G. Doyme Williams, 4301 West Markham, Little Rock 72201	Cardiovascular Surgery
W. R. Johnson, Jr., D.D.S., 404 Med. Arts Bldg., Hot Springs 71901	Oral Surgery

**PROFESSIONAL RELATIONS COMMITTEE  
ARKANSAS MEDICAL SOCIETY**

District	Name of Committee Member	Address
1	F. E. Utley, M.D. B. P. Raney, M.D. T. Murray Ferguson, M.D.	515 North Sixth, Blytheville 72315 403 East Matthews, Jonesboro 72401 200 South Rhodes, West Memphis 72301
2	C. W. Jackson, M.D. Jim Lytle, M.D. Charles F. Wells, M.D.	P. O. Box C, Judsonia 72081 P. O. Box 2116, Batesville 72501 601 South Moose, Morrilton 72110
3	John M. Hestir, M.D. Carl E. Northcutt, M.D. Dwight W. Gray, M.D.	P. O. Drawer 512, DeWitt 72042 Route 1, Box 21-D, Stuttgart 72160 110 West Chestnut, Marianna 72360
4	Howard Harris, M.D. L. R. Turney, M.D. George Roberson, M.D.	207 South Elm, Dumas 71639 101 South Third, McGehee 71654 1708 Doctors Drive, Pine Bluff 71603
5	C. E. Tommney, M.D. L. V. Ozment, M.D. Joe F. Rushton, M.D.	412 North Washington, El Dorado 71730 353 Cash Road, Camden 71701 219 North Washington, Magnolia 71753
6	Donald Duncan, M.D. James G. Martindale, M.D. James Armstrong, M.D.	P. O. Box 778, Texarkana 75501 116 South Main, Hope 71801 P. O. Box 397, Ashdown 71822
7	C. F. Peters, M.D. Robert F. McCrary, M.D. Thomas M. Durham, Jr., M.D.	1420 Potts, Malvern 72104 505 West Grand, Hot Springs 71901 505 West Grand, Hot Springs 71901
8	*Richard M. Logue, M.D. John McCollough Smith, M.D. James Rasch, M.D.	601 North University, Little Rock 72205 4000 Woodlawn, Little Rock 72205 10001 Lile Drive, Little Rock 72205
9	Charles A. Ledbetter, M.D. James Y. Massey, M.D. James L. Pickens, M.D.	224 Eric, Harrison 72601 P. O. Drawer H, Mountain Home 72653 2212 West Walnut, Rogers 72756
10	Samuel Landrum, M.D. David M. Williams, M.D. Boyce West, M.D.	522 South 16th, Fort Smith 72901 809 West Main Place, Russellville 72801 P. O. Box 220, Clarksville 72830

\*Chairman

**ATTENDANCE  
103rd ANNUAL SESSION**

Physicians .....	423
Medical Students .....	17
Scientific Exhibitors .....	73
Commercial Exhibitors .....	126
Auxiliary .....	12
Others .....	18
	<hr/> 669







**MRS. FRANK E. MORGAN**  
North Little Rock  
President 1979-1980  
Arkansas Medical Society Auxiliary

#### **ARKANSAS MEDICAL SOCIETY AUXILIARY CONVENTION REPORT**

The following is a summary of the activities of the Arkansas Medical Society Auxiliary during the Fifty-Fifth Annual Session held at the Camelot Inn, Little Rock, Arkansas, April 22-24, 1979.

A Joint Memorial Service with the Arkansas Medical Society was held on Sunday, April 22nd, at 1:00 p.m.

The Pre-Convention State Board Meeting began at 2:30 p.m. on Sunday, April 22nd, in the Arcade West Room. Mrs. Walter Mizell, President, introduced the guests: Mrs. Ben Johnson, Jr., President-elect of the American Medical Association Auxiliary, and Mrs. Baxter Troutman, President of the Auxiliary to the Southern Medical Association. Mrs. Charles Wilkins presented the proposed budget for 1979-1980, and this was approved. Mrs. A. E. Andrews read the recom-

mendations presented for changes in the By-Laws. The meeting then recessed until the next session.

Members of the Auxiliary and Society attended the 6:30 p.m. reception hosted by the Council of the Arkansas Medical Society.

The past presidents' breakfast was held at 8:00 a.m. on Monday, April 23rd.

#### **First General Session**

The First General Session of the Arkansas Medical Society Auxiliary was held in the White Knight Room of the Camelot Inn, Little Rock, Arkansas, with Mrs. Walter Mizell presiding. Dr. C. C. Long, Executive Vice President of the Arkansas Medical Society, and Dr. Hoyt Gardner, President-elect of the American Medical Association, were introduced; each gave a brief speech.

Honored guests to the Arkansas Medical So-

# PROCEEDINGS



Modeling for the Tuesday luncheon style show were (left to right) Mrs. Harry Hayes, Little Rock; Mrs. Deno Pappas, Hot Springs; Mrs. William S. Orr, Jr., Little Rock; Mrs. Curry Bradburn, Little Rock; Mrs. James Bethel, Benton; Mrs. John B. Simpson, Hot Springs, and Mrs. James Gardner, Hot Springs.



Mrs. Harold Langston models one of the fashions in the Tuesday style show.



Mrs. Gordon P. Oates of Little Rock and Mrs. Harold Langston of Little Rock (left side of picture) join Mrs. Hayes, Mrs. Pappas, Mrs. Orr and Mrs. Bradburn in the parade of models for the Tuesday fashion show.





Mrs. Walter Mizell, Auxiliary President for 1978-79, addresses the House of Delegates of the Arkansas Medical Society.

ciety Auxiliary were introduced as Mrs. Ben Johnson, Jr., President-elect of the American Medical Association Auxiliary; Mrs. Baxter S. Troutman, President of the Auxiliary to the Southern Medical Association; and Mrs. Hoyt Gardner, wife of the President-elect of the American Medical Association.

Thirty-nine delegates were seated by the secretary, Mrs. Jacob Ellis. Mrs. Gordon Oates, parliamentarian, declared a quorum was present.

AMA-ERF Chairman, Mrs. James Bethel, reported that \$16,984.29 had been received by the University of Arkansas College of Medicine from funds collected in the calendar year 1978 for AMA-ERF. Mrs. Bethel also reported that the Arkansas Medical Society Auxiliary had contributed \$1,000 to the College of Medicine as a gift in honor of the school's centennial year.

Mrs. Walter Mizell gave a resume of her duties and experiences over the past year as President of the Arkansas Medical Society Auxiliary. The Auxiliary approved the new guidelines of the loan funds as read by Mrs. Charles Wilkins.

The nominating committee for 1979-1980 is as follows:

- Mrs. Walter Mizell, Chairman — Saline County
- Mrs. Gordon Oates — Pulaski County
- Mrs. Charles Wilkins — Pope County
- Mrs. Roger Bost — Pulaski County
- Mrs. Taylor Prewitt — Sebastian County



Mrs. Frank Morgan, Auxiliary President-elect, speaks to the House of Delegates of the Medical Society on April 22.

Mrs. Frank Morgan was empowered to appoint delegates to the National Convention.

Mrs. Charles Wilkins presented the Finance Budget for 1979-1980. The meeting was recessed until the next session.

Craighead-Poinsett County Auxiliary hosted a 12:30 p.m. luncheon in the Plaza East Room of the Camelot Inn. Hostess was Mrs. W. T. Shanlever, president of the Craighead-Poinsett County Auxiliary. Mrs. Ben Johnson, Jr., president-elect of the American Medical Association Auxiliary, was the guest speaker. Door prizes were distributed. A musical program was presented



Dr. and Mrs. Walter Mizell at the Inaugural Banquet on Tuesday evening.



## AUXILIARY OFFICERS FOR 1979-1980



Mrs. Frank Morgan of North Little Rock (right) is the 1979-80 president of the Arkansas Medical Society Auxiliary. Serving with her are Mrs. Warren Boop of Little Rock, president-elect, Mrs. Herbert Taylor of West Memphis, Mrs. Jim Haynes of Fayetteville, Mrs. W. J. James of Pine Bluff, and Mrs. Karlton Kemp of Texarkana as vice presidents, Treasurer Mrs. Ray Jouett of Little Rock, and Mrs. J. C. Callaway of El Dorado as Recording Secretary.

## PAST PRESIDENTS OF THE AUXILIARY



Present for the breakfast meeting of the Auxiliary Past Presidents' Club were (front row, left to right) Mrs. W. S. Riley, Mrs. Frank Padberg, Mrs. Curry Bradburn, Mrs. Hoyt Choate, Mrs. Mason Layson, Mrs. Paul Gray, Mrs. John McCollough Smith, (standing, left to right) Mrs. A. A. Little, Mrs. James Branch, Mrs. C. W. Jones, Mrs. Harold Langston, Mrs. Gordon Oates, Mrs. Louis Hundley, Mrs. Lynn Harris, Mrs. Kenral Kutait, Mrs. Charles Wilkins, Mrs. William Hibbitts, Mrs. A. S. Koenig, Mrs. Carl Wilson, and Mrs. Carl Parkerson.





Mrs. Mason Lawson, past president of the Arkansas Medical Society Auxiliary and the American Medical Association Auxiliary, installed the new officers of the Auxiliary at the Tuesday luncheon.

by Mrs. George Mallory, vocalist, accompanied by Mrs. Morris Jessup.

\* \* \* \*

Members of the Auxiliary joined Society members at the cocktail party hosted by the Arkansas Blue Cross-Blue Shield in the Golden Knight Room of the Camelot Inn.

A joint Prayer Breakfast was held at 7:30 a.m. on Tuesday, April 24th, for members of the Arkansas Medical Society and Auxiliary.

#### Second General Session

The Second General Session of the Arkansas Medical Society was called to order at 9:30 a.m. with Mrs. Walter Mizell presiding. Thirty-eight delegates were seated by roll call of the secretary and a quorum was declared present. Reports were given by the county presidents with the regional vice presidents serving as moderators. Mrs. Amail Chudy reported 106 Auxiliary members registered for the convention this year. Mrs. Kemal Kutait, chairman of the nominating committee, presented the following slate of officers for the coming year:

President — Mrs. Frank Morgan  
President-elect — Mrs. Warren Boop



Dr. and Mrs. Warren Boop at the Inaugural Banquet on Tuesday evening.

Secretary — Mrs. J. C. Callaway  
Treasurer — Mrs. W. Ray Jouett  
Regional Vice Presidents —  
Mrs. Herbert Taylor, Northeast  
Mrs. Jim Haynes, Northwest  
Mrs. W. J. James, Southeast  
Mrs. Karlton Kemp, Southwest

The officers were elected by acclamation as proposed by the nominating committee.

Mrs. Frank Padberg graciously gave the report of the Courtesy Resolution Committee.

A luncheon, beginning at 12:45 p.m., was held at the Country Club of Little Rock. During the luncheon, a program of informal modeling was presented. Greetings from the Auxiliary to the Southern Medical Association were extended by Mrs. Baxter F. Troutman, president. Presentations were made for Doctors' Day Awards, Membership Awards and AMA-ERF Awards. Auxiliary members of forty years or more were given recognition as they became members in the Medical Auxiliary "Forty Carats" Club.

Mrs. Mason G. Lawson installed the new officers for the coming year. The President's Message was given by Mrs. Frank Morgan, the newly installed President of the Arkansas Medical Society Auxiliary.

Meeting adjourned.



# Angle-Closure Glaucoma:

## An Eye Disease Which May Resemble Other Illnesses

Morriss M. Henry, M.D.\*

One of the diseases of the eye routinely treated by ophthalmologists is glaucoma. Many people have heard of this disease and are aware that it is characterized by abnormally high pressure in the eye which leads to damage of the optic nerve. Most eye patients are accustomed to the "pressure check," the procedure which determines whether eye pressure is normal or abnormally high.

One type of glaucoma presents particularly difficult problems in diagnosis: angle-closure glaucoma, so called because it is caused by the mechanical blockage of the fluid leaving the eye. Fluid formed inside the normal eye drains through the drainage canal of the eye; but in eyes which have a narrow space between the iris and the cornea, the iris can close over the drainage canal and trigger a sudden buildup of pressure inside the eye.

The closing of the drainage angle can be either gradual or sudden, and either complete or intermittent. Some patients experience intermittent attacks for some time before complete closure occurs; but in others, closure can be sudden and extremely painful, necessitating immediate care to prevent complete blindness. Herein lies the great difficulty in dealing with this disease: how to recognize the potential for the disease and thereby prevent it; how to recognize symptoms of a mild attack and treat the eye before a severe attack occurs; and how to keep a severe attack from causing extreme pain and blindness.

Who tends to have angle-closure glaucoma?

Tendencies to watch for are farsightedness in a person with small eyes, although persons with other types of eyes can also develop the disease. A pinlight held to the side of the eye may show the iris bulging forward, preventing light from traveling across the cornea.

Dilation of the pupil can bring on an attack of angle-closure glaucoma; the physician should test eye pressure both before and after dilation and be able to treat the attack of glaucoma if it should develop.

Persons having a mild attack of angle-closure glaucoma may have fogging or hazy vision, especially colored rings or rainbow around lights in evening or early morning hours, or when watching television. The pupil dilates at such times, causing the iris to fall back against the canal and block it, thus causing the pressure in the eye to rise. The attack, if it is intermittent, may subside without serious consequences for some time. However, eventually the canal becomes closed permanently and the pressure remains high, leading to blindness in most cases.

Diagnosis after such an attack may be difficult. After the attack passes, the eye often appears to be mildly irritated, as with a case of iritis. The use of the instrument called a gonioscope, which functions as a periscope for looking into the eye, enables the ophthalmologist to examine the recess of the angle where the iris joins the wall of the eye, and thus aids in diagnosis.

Sometimes the darkroom test will also enable the physician to determine whether an attack of this type of glaucoma has occurred. The patient sits awake in a dark room for 60 to 90 minutes, and pressure is measured before and after the period. A rise in eye pressure of 8mm of mercury or more is considered positive. (The patient should not sleep during this period, since sleep might prevent the angle closure from occurring.) Unfortunately, however, a negative test does not rule out the possibility of an attack in the future. Examination of the angle is still the most important way to detect the likelihood of angle-closure attack.

Perhaps the most serious problem of all in handling persons with this disease is dealing with the severe and unpredicted attack, which can cause great pain and even blindness if it is not treated quickly. Usually the eye of the patient becomes red, swollen, and painful; but pain may occur in the forehead, the ears, the sinuses, the teeth, or even in the abdominal area, mimicking a gall bladder attack or a stomach ulcer. The patient may experience an abnormally slow heart-beat accompanied by profuse sweating, and think that a heart attack may have occurred.

\*Post Office Box 1727, Fayetteville, Arkansas 72701.



What is done to prevent serious attack or blindness?

The surgical treatment called iridectomy is the usual method of prevention. It consists of creating a small hole in the iris which provides a bypass for fluid forming in the back of the eye. The fluid is able to flow through this hole into the angle without causing the iris to press against the drainage canal and block it. In cases where attack has appeared in only one eye, but where

the other eye appears to have a narrow angle also, ophthalmologists usually perform surgery on the second eye as soon as the first is out of danger.

Prompt care of a patient who has had angle closure, no matter how mild the attack, is very important. Physicians in general practice or emergency room work should be particularly vigilant in order to recognize the disease and assure their patients the prompt care they need.



# Pediatric Department History, University of Arkansas College of Medicine 1904-1978

Vida H. Gordon, M.D.\*

Childhood diseases and problems of prophylaxis in infants and children were not regarded as a separate branch of study in the U. S. until the middle of the 19th century. What pediatric instruction was given after the medical schools were organized was given by professors in obstetrics and gynecology.

Pediatrics, as a distinct division of medicine, received no recognition in Arkansas until Dr. Morgan Smith (1868-1935). For 16 years he was the only pediatrician in the State.<sup>1</sup> The first children's hospital was built in 1924 — by the Arkansas Children's Hospital Association. This hospital was supported by private donations and State aid and had a 50-bed capacity. It is still supported by private donations and state and community aid. It was not until 1969 that any charges were made to the patient.<sup>2</sup>

In 1904 pediatric instruction in the University of Arkansas School of Medicine began. Dr. Morgan Smith was the state's pioneer in pediatrics and established a Department of Pediatrics of which he was head until his death in 1935.<sup>1</sup>

From 1935 to 1947 there was no Department of Pediatrics. Any pediatrics taught was done so by practicing pediatricians on a volunteer or part-pay basis and all appointments were made in the Department of Medicine. The teaching of pediatrics to house staff and medical students was minimal in comparison to the time allocated to other specialties. The teaching that was offered was possible because of the volunteer services of Dr. Edwin Mullins, Pine Bluff, Arkansas, the first certified pediatrician in Arkansas and a member of the Academy of Pediatrics, and the services of Dr. Barnett P. Briggs from 1938 to 1942 when he left for World War II. Dr. Briggs was the second certified pediatrician in the State. He did not return from military service until 1946. Other practicing pediatricians who contributed to the teaching were Dr. Wilford Parsons and Dr. James E. Jones (both deceased) and Dr. Irving Spitzberg and Dr. Samuel L. Phillips. In 1943 Dr. Vida H. Gordon came to the State in the capacity of Medical Director of the Arkansas

Crippled Children's Program and Assistant Professor of Pediatrics in the Department of Medicine of the University of Arkansas School of Medicine. She was the third certified pediatrician in the State. At that time the pediatric teaching was at a low ebb since most of the practicing pediatricians were in the military service.<sup>3</sup>

Since Dr. Gordon was charged with the responsibility of providing good medical care to the crippled children, and doctors were scarce, it was necessary to give a great deal of the pediatric care to the children herself.

The present Department of Pediatrics with the full-time staff of pediatricians was born at a luncheon conference between Dr. Francis Rothert, Director of Maternal and Child Health, Arkansas State Health Department, and Dr. Vida H. Gordon, then Director of the Arkansas Crippled Children's program. Dr. Rothert had available funds from the U. S. Children's Bureau and was about to set up a child care demonstration project in a county. Dr. Gordon suggested at that time that the most fruitful demonstration could be accomplished at the Medical School where the development of a Department of Pediatrics and pediatric training of the State's doctors was badly needed.<sup>3</sup>

On October 19, 1946, Dr. Gordon sent to Dr. H. C. Chenault, Dean of the School of Medicine, a memorandum containing suggested plans for the development of a separate Department of Pediatrics at the Arkansas School of Medicine. She outlined the sparse existing teaching facilities in pediatrics at the school, and also stressed the excellent opportunity for development.<sup>4</sup>

On December 18, 1946, Dean H. C. Chenault sent on to Dr. T. T. Ross, State Health Commissioner, the verbatim outline of the proposed Department of Pediatrics as prepared by Dr. Vida Gordon.<sup>5</sup>

The personnel requested for this pediatric department included a full-time pediatrician, a half-time pediatrician, two supervising nurses with pediatric training, a laboratory technician trained in microchemical techniques, a medical social worker, two pediatric residents, and a sec-

\*9501 North Rodney Parham Road, Little Rock, Arkansas 72207.



retary. The total budget for the pediatric department set at that time was \$33,420.

The necessary federal funds were obtained through the assistance of the State Health Department. The first full-time head of a separate pediatric department was Dr. William A. Reilly, who served from 1947 to 1951. Dr. Reilly added two full-time pediatricians to the department while he was chairman and he left in June 1951 for a position in California.<sup>3</sup>

Dr. Wilbur Lawson, now a practicing pediatrician in Fayetteville, Arkansas, was a full-time pediatric resident at the time. Though he was very young for the position, he was made Acting Administrator and Assistant Professor of the Department of Pediatrics during the interim from June 1951 to March 1952.

Within the span of one year, Dr. Lawson had been promoted by Dr. William Reilly from Chief Resident to Instructor to Assistant Professor and Acting Head of Pediatrics. He remained in this capacity until Dr. Katharine Dodd came in March 1952. Dr. Lawson was in private practice for a short time in Oklahoma but in July 1953 joined the U.S. Army in active service. When he returned from the Army, he relocated in Fayetteville, Arkansas, and has been active in State pediatric affairs ever since.<sup>6</sup>

Dr. Katharine Dodd came to Arkansas in March 1952 as the second Chairman of the Department of Pediatrics. Dr. Dodd came from the Cincinnati Children's Hospital highly recommended by Dr. Ashley Weech, her Chief of Pediatrics at the University of Cincinnati College of Medicine. She was trained as a pediatrician almost entirely at Johns Hopkins University. Her recommendations from such outstanding pediatricians as Dr. Wilbert C. Davison, at Duke University and Dr. Irvine McQuarrie at Minnesota Medical School described her as a superlative teacher, clinician, and investigator. Dr. Dodd proved to have, in her capacity as Chief of Pediatrics in Arkansas, all of these attributes. Her chief contribution to the department was her insistence on quality of health care for all children and the development of diagnostic acumen in her resident staff.<sup>7</sup>

Dr. Dodd was responsible for accepting the first black house staff in the institution who happened to be a woman also, Dr. Edith Irby Jones. This resident has since made a name for herself professionally in Houston, Texas. She is an in-

ternist in both teaching and private practice. She has fully justified Dr. Dodd's confidence in her ability. At the time Dr. Dodd retired there were three full-time pediatricians on her staff and her excellent teaching had attracted an increased number of pediatric trainees.<sup>3</sup>

On June 14, 1957, Dr. Dodd was given a retirement farewell, very appropriate for so scholarly, yet so athletic a professional. A half-day scientific program was held in the new UAMC auditorium and papers were given by many of her former trainees from all over the country. Dr. Douglas Lawrason, Provost for Medical Affairs UAMC had proclaimed "Katie Dodd Day." The scientific program was cosponsored by the Office of Post Graduate Medicine of UAMC and the Arkansas Chapter, American Academy of Pediatrics, Dr. Vida H. Gordon, Chapter Chairman.

In the afternoon all the invited guests and Dr. Dodd went by air-conditioned bus with a box lunch to Winrock Farm where Dr. Dodd herself participated in water skiing on the lake. It was not unusual Monday morning to see her residents, male or female, come in to work with sore muscles as a result of 15-20 mile hikes in mountains with Dr. Dodd. Her residents were her family, on and off duty. Her many trainees presented her with the keys to an air-conditioned Chevrolet on "Katie Dodd Day."<sup>8</sup>

From June 1957 to January 1958, the department was held together by the two remaining full-time staff, Dr. Douglas Heiner, who was named Active Chairman, and Dr. Alice Gamble Beard. Dr. Heiner was a certified cardiologist at the time and he has since moved on to prominence and certification in allergy and immunology and is now located at Harbour General Hospital, Torrence, California. Dr. Beard was in charge of the newborn area at that time and has maintained her interest in it and as Director has developed that area in the department up to the present time.<sup>3</sup>

Dr. Theodore C. Panos was the third full-time Head of the Department of Pediatrics and served as its Chairman from January 1, 1958 until his sudden death, April 15, 1970. He came to Arkansas from the University of Texas in Galveston, Texas, where he had been a full Professor of Pediatrics and already had become nationally recognized as a physician and teacher. Dr. Panos was a scholar as well as a scientist and had ex-

pertise in several languages not the least of which were Greek and Latin. He was on the Editorial Board of the American Journal of Disease of Children, an official examiner of the American Board of Pediatrics, Consultant to the Air Force, and a member of the Health Research Facilities National Advisory Council's Scientific Review Committee of the National Institute of Health.<sup>3</sup>

Dr. Panos' first love was children, his second love was training physicians to care for children. Dr. Panos was not only a good clinician and excellent teacher, but he also had the ability to administer the department well. In 1940 there were three pediatricians in the State. In 1958 when Dr. Panos arrived there were 19. At the time of his death, there were 51 certified pediatricians in the State and 32 received their training under Dr. Panos. During his tenure he attracted to his department an outstanding staff so that at the time of his death there were 17 full-time professional personnel with almost every subspecialty represented within his own department.<sup>9</sup>

In 1964 Dr. Vida H. Gordon returned to the Department of Pediatrics after two years fellowship training in immunology in order to establish a training program in pediatric allergy. Dr. Panos was the first full-time member of the faculty in the Arkansas Medical Center to be interested in establishing a training program in allergy. Six physicians completed the two-year fellowship training program and four of these stayed in Arkansas.<sup>3</sup>

Dr. Panos had a broad concept of what child health care should encompass. On October 13, 1968, he was successful in obtaining the federal funds and initiating a children and youth program, the purpose of which was to provide complete and comprehensive care for the children and youth in the poorer districts of Pulaski County and these were children who economically could not receive such care.<sup>3</sup> This program has grown and been expanded under the guidance of Drs. Rex Ramsay and Stuart Fitzhugh so that complete episodic care is provided in three sections of Pulaski County. The staff consists of two pediatricians, nurse practitioners, a nutritionist, a full-time social worker and a secretary. This includes well-baby care. The program is still federally funded. All patients are screened by a dentist and dental care given if needed.<sup>10</sup>

Dr. Panos was responsible for the appointment

of the first black female pediatric resident. The choice of this individual proved to be a good one. She performed so well he appointed her Chief Pediatric Resident. She served in this capacity with distinction. Dr. Joycelyn Elders then proceeded to become a Research Fellow in Endocrinology under the tutelage of Dr. Edwin Hughes and progressed from Instructor to Assistant Professor, Associate Professor and finally Professor of Pediatrics in 1976. Dr. Elders now has a national reputation in the field of Endocrinology and Metabolism. She is currently on three National Committees, two of which are advisory to DHEW\*. She is a member of nine societies. She is the first black to receive a full professor status and is still the only one in the Arkansas College of Medicine.<sup>3</sup>

Dr. Panos' sudden death was an inestimable loss to the State and to the Arkansas School of Medicine. Dr. Edwin Hughes, Professor of Pediatrics, was appointed by the Dean, Dr. Winston Shorey, April 20, 1970, to be the Acting Chairman of the Department of Pediatrics, following the death of Dr. Panos. He served in this capacity about one month but was forced to resign because of ill health.

On June 1, 1970, Dr. Roger Bost, Professor of Pediatrics, was appointed by the Dean as Acting Chairman of the Department of Pediatrics. He served in this capacity from June 1, 1970 until March, 1971. Dr. Bost inherited a very capable staff. With his good administrative acumen, he recognized this and encouraged each member to manage his own area. He secured excellent cooperation of every member and kept the staff working together until Dr. Robert Merrill arrived. The full-time staff at that time and their subspecialties were as follows:<sup>3,9</sup>

Professors:

Roger Bost, M.D., Acting Chairman,

Ambulatory

Alice Beard, M.D., Neonatology

James Dennis, M.D., (part time) Vice  
Chancellor, UAMC

Edwin Hughes, M.D., Nephrology and  
Endocrinology

Associate Professors:

D. Lee Berry, M.D., Hematology

John Bornhofen, M.D., Neurology

Sam Clements, Ph.D., Clinical Psychology

Harold Decker, M.D., Ambulatory

\*Department of Health, Education and Welfare.



Thomas Dungan, M.D., Cardiology  
 Vida H. Gordon, M.D., Allergy and  
 Immunology  
 Manford Morris, Ph.D., Biochemistry

Assistant Professors:

Rosalind Abernathy, M.D., Ambulatory  
 Samuel Boellner, M.D., Neurology  
 James O. Cooper, M.D., Neonatology  
 Bart Danford, Ph.D., Clinical Psychology  
 Joycelyn Elders, M.D., Endocrinology  
 Stuart Fitzhugh, M.D., Ambulatory  
 Maxine Hinton, Ph.D., Nutrition

Instructors:

Robert Arrington, M.D., Fellow in  
 Neonatology  
 Roosevelt Brown, M.D., Dentist  
 Max Haynes, M.D., Hematology  
 Helen Rountree, M.D., Allergy and  
 Immunology (Fellow)

All but three of the above staff had been recruited by Dr. Panos and this list shows the diversity of pediatric subspecialties represented within the Department of Pediatrics.

In addition to the full-time staff there were 30 voluntary pediatric faculty members from all over the State, though mainly from Little Rock.

Dr. Robert Merrill was the fourth full-time Head of the Department of Pediatrics and served as its Chairman from March 1971 to July 1974. Dr. Merrill came from the University of Virginia where he was Professor of Pediatrics and in charge of a program for children with multiple defects. He had been Associate Professor at Vanderbilt University previously and was a graduate of Tulane School of Medicine.<sup>11</sup> Dr. Merrill was an excellent clinical teacher of pediatrics and well liked by the students and pediatric faculty. In 1971 the students awarded him the Golden Apple given to the clinical faculty member in the School of Medicine manifesting outstanding teaching expertise.<sup>12, 3</sup> In 1972 he was chosen as Chairman of the University Medical Group which was organized for the purpose of providing a place and the mechanics for the faculty of all departments to see private patients. He received a plaque at the end of his service in that capacity for his influential leadership and outstanding efficiency.<sup>3</sup> Dr. Merrill's greatest contribution was the equalization or near equalization of the salaries of the various academic ranks regardless of sex or race. He felt strongly that teachers of equal rank and responsibility should

have equal salaries regardless of sex or race. He did his best to bring this about.

He also helped to develop a close working and teaching relationship between the Department of Pediatrics and the Arkansas Children's Hospital. It was during his tenure that the 24-hour episodic emergency clinic was set up at Children's Hospital. The first year this was in operation in 1972-73, they saw 37,152 patients.<sup>13</sup> The year before 10,196 were seen in the same area. Dr. Merrill successfully enticed Dr. Florence Char to return to the Pediatric Department and the School of Medicine as the first full-time faculty with expertise and training in the science of genetics. She previously had been a certified cardiologist in the department.

During Dr. Merrill's tenure, Dr. James O. Cooper, a pediatrician recruited from El Dorado to the academic pediatric staff in the Maternity and Infant Care Program, organized and conducted the first class for nurse practitioners held in the School of Medicine. There were six graduates of this class and most of these nurses are working in the Arkansas Children's Hospital satellite clinics held under the auspices of the Arkansas State Health Department. In February, 1977, the first nurse practitioner examination approved by the American Academy of Pediatric Faculties and the Nurse Practitioners was administered.<sup>3</sup> Three of the original class took this examination and passed it.<sup>14</sup> Dr. Merrill backed this program 100% as he had been in charge of a similar program that was very successful in Virginia. The program is continuing under the auspices of the School of Nursing, University of Arkansas for Medical Sciences.

Dr. Merrill resigned in January 1975 to become Professor of Pediatrics and Chairman of the Department of Pediatrics at Texas State School of Medicine in Lubbock, Texas. He had continued to teach pediatric students and house staff at the Arkansas Children's Hospital (ACH) from July 1974 to January 1975.

Just prior to Dr. Robert Merrill's chairmanship, the Executive Committee of the Board of Directors of ACH voted on June 26 that the new chairman of the Department of Pediatrics, provided he was acceptable to the ACH Board, would automatically be the Medical Director of, and Administrator of ACH.<sup>15</sup> Dr. Merrill held this position until June 1971 when he delegated Dr. Neil Sims, a member of his faculty, to be

the Medical Director of ACH. Dr. Sims served in this capacity until November 15, 1973, when Dr. H. Gordon Green, also a member of the pediatric faculty, took his place. Dr. Sims had asked to be relieved of this responsibility in order to devote more time to teaching. Dr. Green resigned June 30, 1977, to leave the state. Dr. Betty Lowe, a graduate of Arkansas College of Medicine and an outstanding pediatrician in Texarkana, Arkansas, was recruited by Dr. Thomas Bruce, Dean, to be full-time Professor of Pediatrics and Director of Medical Education at ACH. She became Medical Director of ACH July 1, 1977, and has continued her teaching duties in the Department of Pediatrics. This liaison between ACH and the University of Arkansas for Medical Sciences (UAMS) laid the groundwork for much of the expansion of the pediatric program that Dr. Robert Fiser, the present Chairman of the Department of Pediatrics, has accomplished. The administration of ACH is ably accomplished by Leland McGinness, allowing Dr. Lowe to devote her time to medical matter only.<sup>3</sup>

Dr. William T. Dungan, Professor and Vice Chairman of the Department of Pediatrics during Dr. Robert Merrill's chairmanship, was chosen by the pediatric faculty and the Dean of the University of Arkansas College of Medicine to serve as the interim chairman until a new chairman of the department should be selected. He served as Acting Chairman of the Department of Pediatrics from July 1974 to March 1975. Dr. Dungan let the directors of each subspecialty section continue to carry out the programs that had been worked out during Dr. Merrill's chairmanship. He successfully kept all the members of the Pediatric Department working together as a unit and assisted the new Dean of the College of Medicine and the Search Committee in the selection of the new chairman of the Department of Pediatrics. He has continued his position of Vice Chairman of the Department of Pediatrics as well as Director of the Cardiology Section.<sup>3</sup>

In March 1975 Dr. Robert Fiser, who was a graduate of the University of Arkansas College of Medicine, and had returned to the Medical School in 1974 as Associate Professor in the Pediatric Endocrinology Section, was made Professor and Chairman of the Department of Pediatrics. He is currently serving in that capacity. Dr. Fiser had most of his clinical training while Dr. Theo-

dore Panos was Chairman of the Department of Pediatrics. He has expressed to the writer on several occasions that he would like to develop the department along the lines Dr. Panos did.<sup>16</sup> Dr. Fiser is the fifth full-time permanent Chairman of the Department of Pediatrics.

There were twenty-four full-time faculty in July 1974 when Dr. Merrill left the Chairmanship of Pediatrics and thirty voluntary pediatric faculty members from all over the State, though mainly from Little Rock. As of June 17, 1977, there were thirty full-time pediatric or joint appointment full-time M.D. faculty, seven Ph.D.'s, two nurse practitioners and one dentist. There were two clinical faculty dentists and fifty-eight clinical pediatric faculty of varying ranks.<sup>17</sup>

During Dr. Theodore Panos' chairmanship much emphasis was placed on research as well as teaching and service and he emphasized this to the faculty many times. In an interview with Dr. Fiser in August 1977<sup>16</sup> it was evident that he too felt research was essential for any department in the College of Medicine. His vision as to how it would be accomplished was somewhat different from that of Dr. Panos, who felt each member of the faculty should have some research project going. Dr. Fiser envisions certain members of the staff spending 2/3 of their time in research and that some would do primarily teaching and service.

In fiscal year 1976-77 the pediatric payroll had increased to \$1,267,000. Only about one-third of this came from State funds and capitation funds.<sup>17</sup> The remaining financial support came from professional fees, grants and contracts with the Arkansas Children's Hospital, the State Health Department, and the Arkansas Crippled Children's Services based in the State Welfare Department and the Arkansas Children's Colony in Conway, Arkansas. Three members of the pediatric faculty provide pediatric care for the Arkansas Children's Colony. The budget for the first full-time Pediatric Department by contract was \$33,420.

Dr. Fiser has demonstrated an unusual ability to consolidate children's services in the State and make maximum use of contractual arrangements making possible extension of specialized services for Arkansas children. He has added to the staff two pediatric cardiologists, a pediatric nephrologist, gastroenterologist, surgeon, pathologist, two general pediatricians, an infectious disease spe-



cialist, a pulmonologist, a pediatric neurologist, a pediatric radiologist and a pediatric ENT specialist.<sup>16</sup>

The one area that needs attention is allergy and immunology, especially clinical allergy. Since Dr. Vida H. Gordon retired in January, 1975, as Program Director for trainees in allergy and immunology, there has been no replacement. With only seventeen certified allergists in a state of two million people, the training program is essential. It stimulates better teaching of medical students in the fields of allergy and immunology.<sup>3</sup> There is light in the horizon however, as June, 1978, an outstanding immunologist joined the department, Dr. Russell Steele. He came from Brooke Army Medical Center where he had been Chief of Infectious Diseases and Immunology for five years. He has already set up the first Clinical Immunology Center for Arkansas and will render invaluable service to Arkansas physicians.

There is some hope at the present time that an Arkansas doctor who is currently in training will be available in one year to replace Dr. Gordon as Program Director of the Allergy and Immunology Training Program.

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# Prophylaxis of Infection with Antimicrobial Therapy

Robert S. Abernathy, M.D., Branch T. Fields, Jr., M.D.,  
Thomas P. Monson, M.D., and Charles M. Nolan, M.D.

Prophylaxis is a frequent reason for use of antimicrobial drugs in the United States. Kunin<sup>1</sup> has estimated that one-sixth of drug prescriptions for ambulatory patients are for antibiotic use in respiratory infections, most often the common cold or other viral illnesses. The use of antibiotics in these settings is usually for prophylaxis. In hospitalized patients, surveys<sup>2-4</sup> show that approximately one-third of all patients receive antibiotics and that 40 to 50% of this use is for prophylaxis. Several surveys in hospitals<sup>2-5</sup> have also shown that antibiotics are inappropriately prescribed for the majority of patients and that the most frequent errors concern prophylaxis. A review of the current status of knowledge concerning prophylaxis will help to develop a more rational and effective use of antibiotics for this purpose.

The clinical efficacy of antimicrobial therapy for prophylaxis can be considered for three large categories of settings (Table 1): first, those in which prophylaxis is both indicated and *effective*; next, those in which prophylaxis is either *ineffective* or unnecessary; and finally, those in which prophylaxis is *potentially effective* but in which clinical experience and judgment is required for selection of those individuals who will be benefited. We shall consider each category and give specific recommendations for therapy as indicated.

## EFFECTIVE USES FOR PROPHYLAXIS

*Prevention of Group A streptococcal, pneumococcal, and meningococcal infections* (Table 2): Prophylaxis of Group A streptococcal infection is primarily indicated for prevention of recurrences of rheumatic fever. The most effective regimen is benzathine penicillin once monthly.<sup>6</sup> Daily penicillin orally is effective, but poor patient compliance reduces its effectiveness. In individuals with asplenia (either surgically or functionally, as in sickle cell anemia), the increased frequency of fulminant sepsis, particularly pneumococcal, may justify the use of oral penicillin

daily or of benzathine penicillin monthly in young children.<sup>7</sup> Its use in adults is controversial. Prevention of meningococcal infections in those close contacts at risk (family, pre-school nursery, mental institutions, mouth-to-mouth resuscitation) is best accomplished by rifampin for 2-4 days. For susceptible strains, a sulfonamide for 4 days is equally effective. Classroom contacts (or less degrees of contact) do not need any pro-

Table 1.  
Effectiveness of Antimicrobial Prophylaxis

<i>Effective uses</i>		
Group A streptococcal, pneumococcal, meningococcal infections		
Tuberculosis		
Influenza A		
Bacterial diarrheas in selected settings		
Gonorrhea, syphilis		
Extensive burns		
<i>Ineffective uses</i>		
Respiratory infections in patients with coma, stroke, severe heart failure, or assisted mechanical ventilation		
Aspiration of gastric contents or hydrocarbons		
Viral respiratory infections		
Minor lacerations		
<i>Potentially effective uses</i>		
Peri-operative settings (surgery, obstetrics-gynecology)		
Patients with medical devices (catheters, prostheses)		
Presentation of bacterial endocarditis		
Immuno-compromised patients		

Table 2.  
Antibiotic Prophylaxis for Coccal Infections

Rheumatic fever	Group A Streptococci	Benzathine Pen. 1, 2 M U q 4 wk
Meningococcal exposure	Meningococci	Rifampin 600 mg q 12 h 2 days close contacts only
Splenectomy	Pneumococci	Benzathine Pen. q 4 wk for 3 yr; immunize
	Group A Strep.	

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phylaxis.<sup>8</sup> A wider use and improved efficacy of pneumococcal and meningococcal vaccines should reduce the need for antibiotic prophylaxis in the future.

*Prevention of tuberculosis:* A brief summary of guidelines for use of isoniazid is given in Table 3. Consult reference 9 for details.

*Prevention of influenza A:* Recent experiences document that amantadine prevents infections with different strains of influenza A virus but not with influenza B. It should be used more frequently, as summarized in Table 4.<sup>10</sup>

*Prevention of bacterial diarrheas:* Short-term therapy (1-3 weeks) with a variety of anti-infectives (doxycycline,<sup>11</sup> bismuth subsalicylate) has reduced the incidence of bacterial forms of travel-

ers' diarrhea. Outbreaks of diarrhea due to *E. coli* or *Shigella* have been controlled by oral antibiotics. Potential risks from antibiotic usage include an increase in the frequency of antibiotic-resistant pathogens in the environment and enhancement of diarrhea caused by *Shigella* or *Salmonella*. At the present, guidelines for selection of individuals to treat remain controversial.

*Prevention of other infections:* Both gonorrhea and syphilis can be prevented by standard therapy with penicillin in those infrequent circumstances which can justify antibiotic prophylaxis. In patients with extensive burns, antibiotic therapy is clearly beneficial but long-term usage has resulted in emergence of resistant organisms and subsequent nosocomial problems. For individuals traveling in malaria-endemic areas, chloroquine once weekly is effective; it should be followed by curative therapy with primaquine.<sup>12</sup>

**Table 3.**

**Isoniazid Prophylaxis for Tuberculosis**

*Dose:* 300 mg (or 10 mg/kg) once daily for 1 yr

*Indications:*

- 1) Newly infected: conversion of skin test to  $>10$  mm or increase of  $\geq 6$  mm within past 2 yr
- 2) Close contacts of active pulmonary tuberculosis
  - a) Positive skin test: treat
  - b) Negative skin test: treat children; follow adults
- 3) Patients with positive skin test and x-ray compatible with tuberculosis, having negative cultures or prior inadequate therapy.
- 4) Patients on prolonged therapy with steroids or immunosuppressants and positive skin test
- 5) Patients with positive skin test and silicosis, diabetes, lymphoma, leukemia, gastrectomy.
- 6) Other patients with positive skin test:
  - $\leq 6$  yr — treat; 6-35 years — treat usually
  - $\geq 35$  yr — treat those at high risk only

**Table 4.**

**Chemoprophylaxis In Influenza**

Effective for influenza A only

*Indications* (Jackson, 1977)

- Household contacts
- Hospital patients, personnel when contacts
- Institutions, especially for elderly
- Unvaccinated people with serious diseases, pulmonary, cardiac, metabolic, immunologic
- Vaccinated adults at high risk
- Hospital personnel in pandemic

Amantadine 100 mg bid for duration or risk

**INEFFECTIVE USES FOR PROPHYLAXIS**

*Prevention of respiratory infections in patients with coma, etc.:* Antibiotic therapy increases the incidence of oropharyngeal colonization with resistant bacteria (enteric gram-negative bacilli predominantly) and results in an increased frequency of pneumonias, which are poorly responsive to antibiotic therapy.<sup>13</sup>

*Prevention of pneumonia in aspiration of stomach contents or hydrocarbons:* Here also routine antibiotic therapy increases the frequency of poorly-responsive pneumonias.<sup>14</sup>

*Prevention of bacterial infections in viral respiratory illnesses:* The rate of bacterial complications is so low that routine, prophylactic use of antibiotics cannot be justified.<sup>15</sup>

*Prevention of infection in minor lacerations:* With adequate cleansing and debridement, the rate of infection is too low to justify routine prophylaxis and is not altered if prophylaxis is used.<sup>16</sup>

**POTENTIALLY EFFECTIVE USES FOR PROPHYLAXIS**

A. *Prophylaxis with systemic antibiotics in perioperative settings:*

Many physicians have questioned the effectiveness of antimicrobics in preventing post-surgical infections. A brief survey of the basis for surgical prophylaxis and results of clinical trials will clarify some controversial areas and justify current recommendations.

1. *Theoretical basis and experimental data:*

Davidson, et al,<sup>17</sup> found the most important factor influencing the occurrence of post surgical wound infections to be bacterial contamination during surgery. Other factors included potentially "dirty" operations, increasing age of the patient, length of the operative procedure, and the placing of patients in a large ward. Another study<sup>18</sup> showed that the incidence of postoperative infection could be reduced by strict adherence to aseptic technique, by shortening the operative time, and by the use of smaller wards to reduce cross-contamination.

The basis in experimental animals for antibiotic prophylaxis in surgery was laid down by Miles and Burke.<sup>19,20</sup> They found that inhibition of host defenses would result in an increased wound infection size only if the inhibiting factors were given within the first 2-4 hours after bacterial inoculation, when biopsies of the developing wound infections still showed normal skin and subcutaneous tissue. Host defense inhibitors given later than the critical 0-4 hour interval ("decisive period") following inoculation did not result in increased size or extent of the wound infections. They could prevent experimental staphylococcal wound infection if penicillin was administered within the first six hours after inoculation of the staphylococci, but not if the initial dose was given after that critical time interval.

These classical studies demonstrate that for optimal prevention, antibiotics must be present in tissue at the time bacterial contamination occurs; this is a key concept in the timing of antibiotic administration in prevention of postoperative infections. Conversely, however, antibiotic *prophylaxis* should not be initiated any earlier than four hours prior to surgery; violation of this principle will promote the emergency of bacteria which are resistant to the antibiotics being administered. This latter principle should not be confused with antibiotic *therapy* (for already existing infection or gross contamination) which must be administered whenever prior to surgery it is indicated.

2. *Clinical trials.* Chodak and Plaut<sup>21</sup> have critically analyzed the enormous clinical literature in this area and could identify only 24 (out of 131) studies which were appropriately designed to generate evaluable data. For some operations the studies were still too small or infection rates too low to allow firm conclusions about the effectiveness of antimicrobial prophylaxis. How-

ever, for some operations this review appears to provide very useful information. Some examples and a summary will be presented.

In seven well-designed studies of antibiotic prophylaxis in vaginal hysterectomy, fewer patients in the antibiotic prophylaxis group of each study developed postoperative wound infections, and the differences were statistically significant. In studies of "clean" surgery (a non-traumatic, uninfected, operative wound in which the gastrointestinal, genitourinary, or respiratory tracts are not entered), patients in the antibiotic prophylaxis group had approximately the same number of postoperative infections as did those in the placebo group. In six studies of "clean-contaminated" surgery (bronchus, gastrointestinal tract, or oropharyngeal cavity entered but no unusual contamination), there were fewer infections in the antibiotic prophylaxis group; however, these differences were statistically significant in only three.<sup>21-12</sup>

Chodak and Plaut found systemic antibiotic prophylaxis clearly of value in hysterectomy, caesarean section, Charnley total hip operations, and microsurgical craniotomies. Conversely, antibiotics were clearly of no value in laparotomy and groin hernia repairs. In a large group of other operations where the data were contradictory or inconclusive, Chodak and Plaut emphasized that future carefully designed clinical studies were necessary.

3. *Recommendations:* Several authoritative groups have developed compendia of recommendations acceptable to internists and surgeons alike. Perhaps the most comprehensive was put together by the Veterans Administration Ad Hoc Interdisciplinary Advisory Committee on Antimicrobial Drug Usage.<sup>24</sup> General principles from this report include the following: (1) Bowel preparation with oral nonabsorbable antibiotics is still controversial and considered optional. (2) Patients undergoing "clean" surgery have less bacterial contamination during surgery, and do not benefit significantly from systemic prophylaxis. Exceptions might include foreign body implantation, a severely immunocompromised host, and a very long surgical procedure. (3) Conversely, antibiotic administration should be considered as therapeutic rather than prophylactic for the "contaminated" group, e.g., open, fresh traumatic wounds, major break in sterile technique, or suspicion of already existing infection.



(4) Intermediate between these two categories lie the "clean-contaminated" procedures.

Selected examples from their detailed recommendations are summarized in Table 5. Timing and duration are critical for effective prophylaxis. Guidelines for these are given in Table 6.

*B. Prophylaxis in patients with catheters:*

1. *Intravenous catheters:* Bacterial infections accompanying indwelling intravenous catheters present for more than 48 hours are frequent.<sup>25,26</sup> One study found local antibiotic ointment to decrease the incidence of infection but evaluated only surgical venous cutdowns and not percutaneous insertion. Irwin, et al, reported that attention to sterile technique was more important than local antimicrobials in reducing significant

colonization and infection associated with intravenous catheters.<sup>25</sup> There appear to be no controlled studies of systemic antimicrobial prophylaxis in this setting. However, one retrospective review did not show any benefit with prophylactic antimicrobials. Systemic prophylaxis for

**Table 6.**

**Timing of Systemic Antimicrobial Prophylaxis For Surgery**

1. First dose parenterally 2-4 hours before surgery
2. Repeat same dose during surgery
3. Continue for up to 24 hr after surgery (or up to 72 hr if specifically stated in hospital guidelines) but no longer

**Table 5.**  
**Prophylaxis In Peri-Operative Settings**

Clinical Indications	Organisms Expected	Antibiotic Regimen*
<i>Abdominal surgery</i>		
Colon	Gram-neg bacilli (GBN)	<i>Single drug therapy</i>
Small bowel in "blind loop"		a) AMP iv
Gallbladder in high risks	Enterococci	b) CEPH iv <i>OR</i> CEF iv
(elderly, stones, obstruction)	Bacteroides and other anaerobes	c) PNP im <i>OR</i> PN-A iv
Appendix		<i>OR</i>
Vascular catastrophies		<i>Combination therapy</i>
Penetrating wounds		GM <i>OR</i> TM im
CA stomach		<i>PLUS</i> one of a, b, c
Achlorhydria		plus Cl <i>OR</i> CHL iv
<i>Pelvic surgery</i>		
Hysterectomy	As above	Single drug, as above
C-section with ruptured membranes		
<i>Musculoskeletal, soft tissue surgery</i>		
Human bite	Streptococci	<i>Single drug therapy</i>
Major tissue injury	Staphylococci	a) PNP im <i>OR</i> nafcillin iv
		b) AMP iv
Open fracture	Clostridia	c) ERY iv
		d) CEPH <i>OR</i> CEF iv
		e) CNS injury: add CHL iv
<i>Urinary tract infection</i>		
Transurethral surgery with pos. urine culture	GNB Enterococci	Oral: any effective agent Parenteral: single drug from AMP, CEPH, CEF, GM or TM

\*AMP: ampicillin 0.5-1 g; CEPH: cephalothin 1-2 g; CEF: cefazolin 0.5-1 g; CHL: chloramphenicol 1 g; CL: clindamycin 300-600 mg; GM: gentamicin 1.7 mg/kg; TM: tobramycin 1.7 mg/kg; PNA: cryst. penicillin 1 million U; PNP: proc. penicillin 600,000 U.

temporary transvenous pacemakers has also been shown to be of no benefit.<sup>27</sup>

2. *Urinary catheters:* The indwelling urethral catheter has been shown to carry the risk of acquiring bacteriuria with time. The closed drainage system is one of few effective techniques for delaying acquisition of bacteriuria. However, even with this method, 50% of patients will become infected after 11 to 14 days.<sup>28</sup> Antimicrobial prophylaxis in patients with urinary catheters has been controversial. Britt, et al, recently concluded that although a transient decrease in bacteriuria could be attributed to prophylaxis, no difference could be demonstrated after 72 hours and prophylaxis selected out resistant organisms.<sup>29</sup> Thus, there appears to be little justification for routine prophylaxis in urethral catheterization of the low-risk patient.

C. *Prevention of bacterial endocarditis:*

Our current understanding of infective endocarditis dictates the occurrence of bacteremia in a susceptible host. A logical approach to the prophylaxis of endocarditis should come from studying the nature of bacteremia associated with various procedures and manipulations.

1. *Susceptible Host:* There is usually a pre-existent cardiac lesion, but some 20-40% of patients have no apparent underlying heart disease. Those cardiac lesions recognized as susceptible to infection include most congenital heart disease (with the specific exception of uncomplicated secundum atrial septal defect), rheumatic or other acquired valvular disease, idiopathic hypertrophic subaortic stenosis, patients with previous infective endocarditis and prosthetic cardiac devices. Infective endocarditis has been associated with the mitral prolapse syndrome, but definite prophylaxis recommendations have not been made, in part because of the large number of people who may be involved, i.e., up to 28% of normal females in one study.<sup>30</sup> Other defects include arterial venous fistulae, Marfan's syndrome, and syphilitic heart disease.

2. *Associated bacteremia:* Healthy people frequently have innocuous, transient bacteremia, varying considerably with the type of procedure or manipulation. The density concentration of organisms is usually low (5-20 colony forming units per ml), and the duration is usually between 5 and 30 min.

For discussion of the relative risk of endocarditis from various procedures, they may be con-

sidered in categories of high frequency, moderate frequency, and low frequency bacteremia.

a. Procedures associated with high frequency of bacteremia: Antimicrobial prophylaxis should be given to all patients at risk of developing infective endocarditis.

(1) *Dental procedures with gingival bleeding.*

The oropharynx is the most common portal of entry that can be defined in patients with infective endocarditis. Following dental extraction, bacteremia occurs in 60-80% of adults,<sup>31</sup> and 30-65% of children.<sup>32,33</sup> Although viridans streptococci are the most frequent isolates reported, other aerobic and anaerobic mouth organisms are also common.

(2) *Manipulations of septic foci.* The rate of bacteremia after manipulation of infected tissue is impressive. Incision and drainage of staphylococcal abscesses was associated with positive blood cultures in 54% of patients. Richards<sup>34</sup> reported a 67% incidence of bacteremia following massage of infected prostatic tissue and a 9% incidence following manipulation of septic joints. Prophylaxis in this group should be directed toward the specific organism involved.

(3) *Urologic procedures:* Bacteremia is most frequent with the presence of bacteriuria. In patients undergoing transurethral prostatectomy, Creevy and Feeney found positive blood cultures in 11% of patients with sterile urine contrasted to 58% of those with bacteriuria.<sup>35</sup> Following removal of an indwelling urethral catheter after surgery, bacteremia occurred in 26% of patients with bacteriuria but was absent in patients with sterile urine.<sup>36</sup> Bacteremia from the normal urethral flora can occur with urological procedures even with sterile urine. The risk of bacteremia can be minimized by avoiding manipulations of the infected urinary tract.

b. Procedures associated with a moderate frequency of bacteremia: With these procedures the incidence of bacteremia is lower but still sufficiently high to jeopardize selected individuals considered at high risk, such as the patient with a prosthetic heart valve.

(1) *Tonsillectomy:* Bacteremia occurs in 28 to 38%.<sup>37,38</sup> The American Heart Associa-



tion also recommends that all susceptible individuals receive prophylaxis at adenoidectomy.<sup>39</sup>

- (2) *Bronchoscopy*: With rigid bronchoscopy, the incidence of bacteremia may be as high as 15%<sup>40</sup> and most authors suggest that all susceptible individuals receive prophylaxis. With fiberoptic bronchoscopy, only one case report of bacteremia is documented, while more than 150 procedures gave no documented bacteremia.<sup>41</sup> Although the American Heart Association Committee recommends prophylaxis for such patients, others<sup>42,43</sup> do not.
- (3) *Nasotracheal suction and intubation*: Although an incidence of bacteremia of 16% has been associated with these procedures,<sup>44,45</sup> authorities do not recommend prophylaxis.
- (4) *Gastrointestinal procedures including sigmoidoscopy, barium enema, liver biopsy, and endoscopy*: Reported rates of bacteremia vary from 2-14%. Since these procedures are not associated with the development of endocarditis, most patients do not require prophylaxis. However, those individuals with prosthetic valves should receive appropriate prophylaxis.
- c. Procedures associated with a low frequency of bacteremia: Three procedures well studied include fiberoptic bronchoscopy (see above), uncomplicated insertion or removal of intrauterine devices, and uncomplicated vaginal delivery. The 0 to 5% incidence of bacteremia during parturition<sup>46,47</sup> does not justify prophylaxis. Although endocarditis has been attributed to infected intrauterine contraceptive devices,<sup>48,49</sup> Everett, et al, found no bacteremia during insertion or removal of IUDs in 100 women without infection or endometritis.<sup>50</sup> While the American Heart Association Committee has recommended prophylaxis for patients with prosthetic cardiac devices in these settings, others<sup>42,43</sup> do not recommend prophylaxis for these procedures.
- d. Risks of developing endocarditis: The precise benefit of prophylaxis against endocarditis remains conjectural, primarily because the actual incidence in man of endocarditis following bacteremia is difficult to assess. In one study, 98 patients with "chronic rheumatic heart disease" underwent a total of 403

tooth extractions with no cases of infective endocarditis reported.<sup>51</sup> In 350 "rheumatic" children undergoing dental extraction without antimicrobial prophylaxis, 52% had documented endocarditis.<sup>52</sup> Hook and Kaye<sup>53</sup> estimated the risk of endocarditis after tooth extraction to be one case per 500 to 3000 extractions.

3. *Specific recommendations*: Chemoprophylaxis should be initiated just minutes prior to the procedure so as to achieve an active concentration of antimicrobials at the time of bacteremia and to minimize the risk of the selection of a resistant flora by prolonged therapy prior to the procedure. Prophylaxis should be directed against the organism most likely to be responsible for bacteremia in the specific clinical setting. Recently, the American Heart Association has published revised recommendations for prophylaxis of endocarditis.<sup>39</sup> These emphasize the parenteral use of bactericidal drugs and are summarized in Table 7.

**Table 7.**  
**AHA Recommendations For**  
**Endocarditis Prophylaxis**

<i>Viridans streptococci — oropharyngeal procedures</i>	
1)	Aq. cryst. pen. G 1 million U plus proc. pen. G 600,000 U IM 30 min prior to procedure, followed by pen V 500 mg orally q 6 hr for 8 doses.
2)	As in 1), plus streptomycin 1 g IM 30 min prior to procedure.
3)	Pen V 2 g orally 1 hr prior to procedure, followed by 500 mg orally q 6 hr for 8 doses.
4)	In patients allergic to penicillin
a)	Erythromycin 1 g orally 1-2 hr prior to procedure, followed by 500 mg orally q 6 hr for 8 doses.
b)	Vancomycin 1 gm IV 1 hr prior to procedure, followed by erythromycin 500 mg orally q 6 hr for 8 doses.
<i>Enterococci — GU or GI procedures</i>	
1)	A penicillin plus an aminoglycoside
	Pen. G 2 million N OR Ampicillin 1 g IM or IV
	Gentamicin 1.5 mg/kg OR Streptomycin 1 g IM
	Give at time of procedure and for 2 additional doses
2)	In patients allergic to penicillin
	Vancomycin 1 g IV plus Streptomycin 1 g IM at time of procedure and repeat at 12 hr

These revisions are based to a large extent on experimental studies of prophylaxis in a rabbit model of endocarditis. Hook, et al,<sup>42</sup> and Petersdorf<sup>54</sup> have challenged the need for such stringent regimens in most clinical settings in man. Petersdorf has proposed some reasonable alternatives as summarized in Table 8.

D. *Prophylaxis in immunocompromised patients:*

At the present, the largest group of immunocompromised patients are those receiving cytotoxic and immunosuppressive drugs during therapy for neoplastic and autoimmune disorders. A major consequence of such therapy is neutropenia with its resultant increased susceptibility to infections. Careful clinical studies in neutropenic leukemic patients document that infections are frequent, often respond poorly to antimicrobial therapy, and are the most common cause of death.<sup>55</sup> Characteristically, these infections involve the oropharynx, esophagus, anus-rectum, lungs, or urinary tract. They are caused by a restricted group of organisms: enteric bacilli, *Staphylococcus aureus*, *Candida albicans*. In one study,<sup>56</sup> these common commensal organisms of the gastro-intestinal tract were recoverable from body sites prior to infection in 86% of patients. For these reasons, prevention of infection has been attempted with oral antimicrobials, given to suppress gut flora. Schmipff, et al,<sup>57</sup> noted a reduction of infections with a combination of poorly absorbed agents (vancomycin, gentamycin, nystatin), but this was poorly tolerated. Gurwith, et al,<sup>58</sup> observed that oral trimethoprim-sulfamethoxazole reduced the frequency of bacteremia

and the number of febrile days. Other studies, however, have shown no convincing effect from oral prophylaxis. At the present, physicians should take a skeptical attitude towards antibiotic prophylaxis in immunocompromised patients and await further studies.

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Table 8.

**Petersdorf's Recommendations For  
Endocarditis Prophylaxis**

*Viridans streptococci*

- 1) Pen. V2 g orally 1 hr prior to procedure, followed by 500 mg orally 6 hr for 3 doses
- 2) Patients with prosthetic valves,  
Proc. pen. G 1.2 million U plus streptomycin 1 gm IM 30 min prior to procedure
- 3) Patients allergic to penicillin,  
Erythromycin 1 g orally 1-2 hr prior to procedure, followed by 500 mg orally q 6 hr for 3 doses

*Enterococci*

Ampicillin (or penicillin G) plus gentamicin  
(See Table 7)



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## X-ray Diagnosis of the Sprained Ankle

R. Barry Sorrells, M.D.\*

“The ankle x-rays are negative, it must be just a sprain.” So often are we guilty of this statement and usually we imply that nothing serious is wrong. A lack of ankle fracture or dislocation, however, should not necessarily imply a minor injury. As we know, the ligaments and other soft tissues about the ankle are not demonstrated on the routine x-ray and a serious ligamentous disruption may exist in spite of “negative films.”

A sprain may be defined as “the rupture of some or all of the fibers of the ligament.”<sup>1</sup> If the injury does not result in instability of the joint, the sprain may be termed Grade I or II. Grade I sprain is mildly painful, associated with minimal swelling, of limited disability, and presenting as a stable ankle joint. Grade II also presents a stable joint but pain, swelling, and disability are more severe. The most serious of ankle sprains, Grade III, is a major injury with severe pain, swelling, and disability, and presenting an *unstable* ankle joint — that is a joint subject to subluxation or dislocation. All three grades of ankle sprain may appear normal on the routine radiograph!

The Grade I and II sprains will respond to conservative treatment consisting of immobilization, ice, rest, elevation, etc. Grade III sprains however, may require aggressive treatment — frequently surgery.

The parameters of pain and disability are difficult to assess because of wide variation in the patient's subjective reaction. The significance of swelling is also difficult to evaluate — especially in the injured ankle which is not seen for several hours or even days following the injury. The evaluation of ankle stability therefore becomes

the key to diagnosis of the seriously injured ankle with “normal” x-rays.

Certainly, the patient's history and clinical examination are the mainstays of establishing any diagnosis. If the history is consistent with a mechanism of injury known to produce serious ankle ligament disruption (such as the common inversion injury) and the clinical examination reveals ankle joint instability, the diagnosis of Grade III sprain is facilitated and appropriate treatment can be initiated. All too often though, the patient is unable to describe how the injury occurred and because of pain and/or swelling, adequate examination is compromised. An objective test is therefore much needed diagnostically.

The ankle stress x-ray is a procedure applicable to Office Orthopaedics and a very useful objective assessment of the “x-ray negative” ankle.

In the acutely injured and painful ankle local anesthetic infiltration through the sterily prepared skin and into the tender and painful liga-



Figure 1.  
Disruption of the lateral and antero-lateral ligaments of the ankle joint.

\*Little Rock Orthopedic Clinic, P.A., 9500 Lile Drive, P. O. Box 5270, Little Rock, Arkansas 72215.



## X-RAY DIAGNOSIS OF THE SPRAINED ANKLE

ments and soft tissues may be necessary for performing the stress x-ray. In the chronically and recurrently sprained ankle, anesthesia is usually not needed.

By far, the lateral and anterior-lateral liga-

ments are the most commonly injured. (Figure 1) The inversion (adduction) injury usually occurs with some plantar flexion of the ankle and the anterior talofibular and calcaneofibular ligaments (Figure 2) are most commonly sprained.

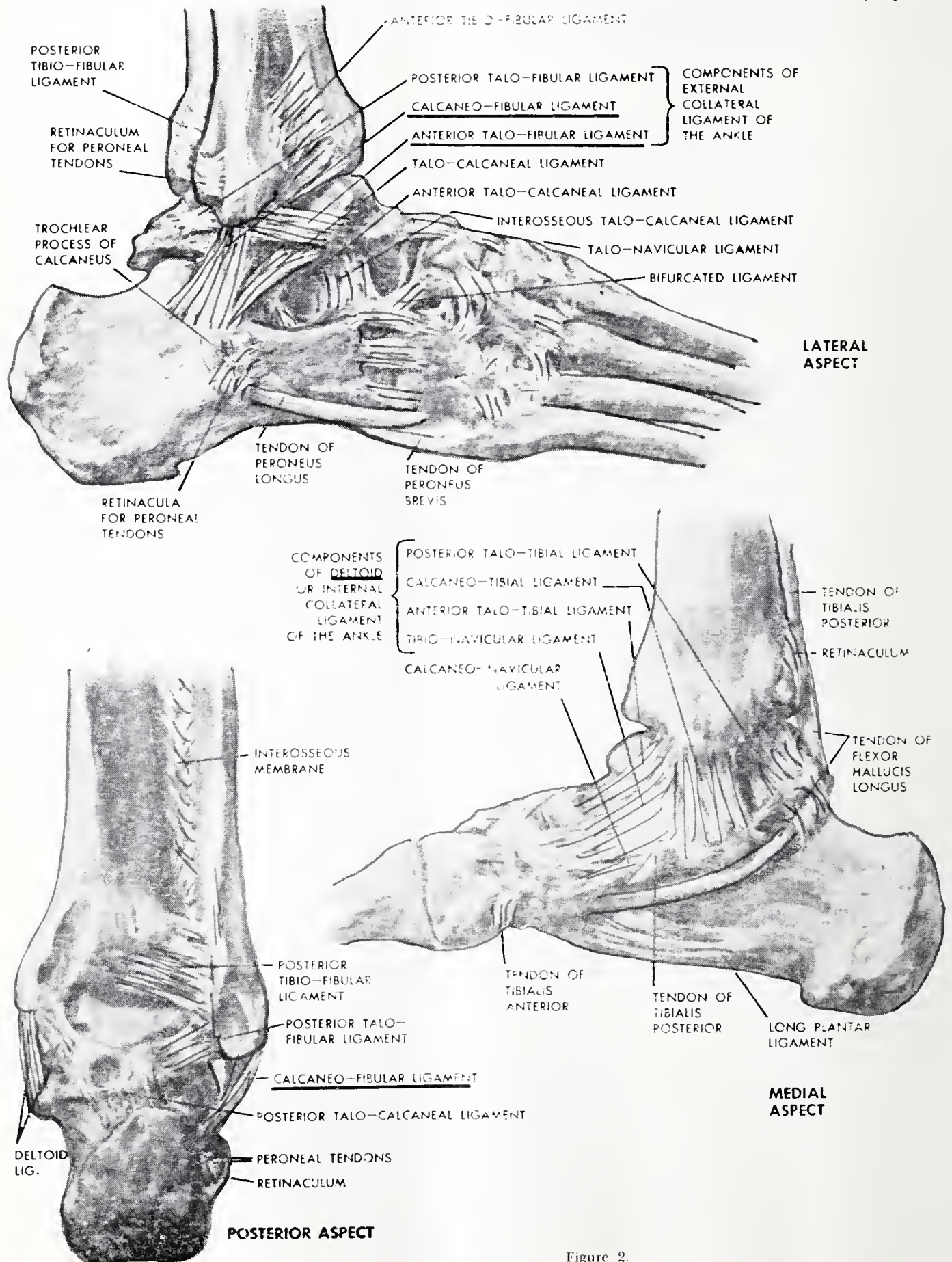


Figure 2.  
Anatomical depiction of the many supporting ligaments about the ankle joint.

The inversion stress film then, is the most commonly applied of the stress techniques although the procedure as described below is equally applicable to stressing the medial ligaments — the deltoid group. (Figure 2)

In the non-painful or anesthetized ankle, the examiner or his trained assistant, adequately protected by lead gloves and apron, places stress on the ankle joint and x-ray films are made — always with comparison views of the non-injured ankle. The inversion stress film with x-rays taken in the AP projection are most commonly employed. (Figure 3) The foot is allowed to fall into a relaxed somewhat plantar flexed position; one hand is placed on the tibia, on the medial side and the other hand at the base of the fifth metatarsal, as the foot is maximally stressed in inversion and the film is exposed. (Figure 4) As clinically indicated, the medial side may be stressed in a similar manner and AP films made.

In either inversion or eversion AP stress films, a tilt of the talus in the ankle mortise of more than 10-15 degrees is considered abnormal. (Figure 5) When there is a marked disparity with the comparison films, a significant ligamentous injury with resultant instability is objectively demonstrated. Appropriate treatment is then undertaken for a Grade III sprain. Surgical repair or reconstruction is frequently the treatment of choice.

Frequently, lateral x-ray exposures are made in an attempt to document suspected antero-posterior ankle joint instability. A simple means

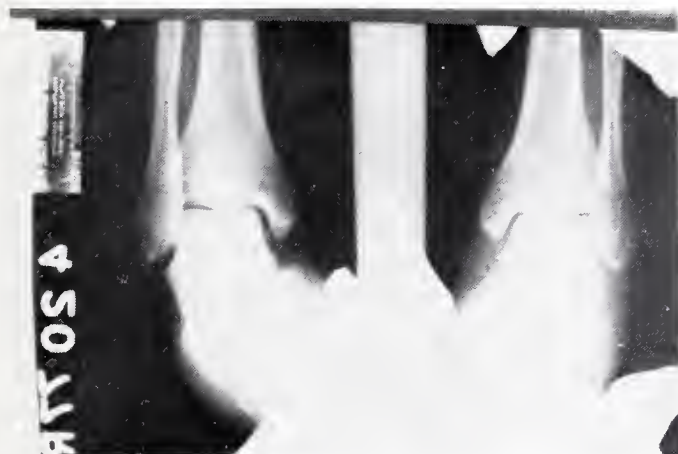


Figure 3.  
Normal bilateral AP inversion stress x-ray.



Figure 4.  
Performing the AP inversion stress x-ray.



Figure 5.  
Abnormal talar tilt in patient's left ankle joint demonstrated by AP inversion stress x-ray.

is to place the patient's heel on the x-ray table, the toes pointing upward, and as pressure is applied to the anterior tibia, a lateral x-ray of the ankle is exposed. This will demonstrate anterior laxity as the talus slips forward on the tibia.

Application of the stress x-rays as described may facilitate the diagnosis of ligamentous disruption of the ankle joint. Appropriate definitive therapy can then be rendered and rehabilitation expedited. The ankle stress x-ray is a desirable adjunct to diagnosis in the practice of Office Orthopedics.

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# ELECTROCARDIOGRAM



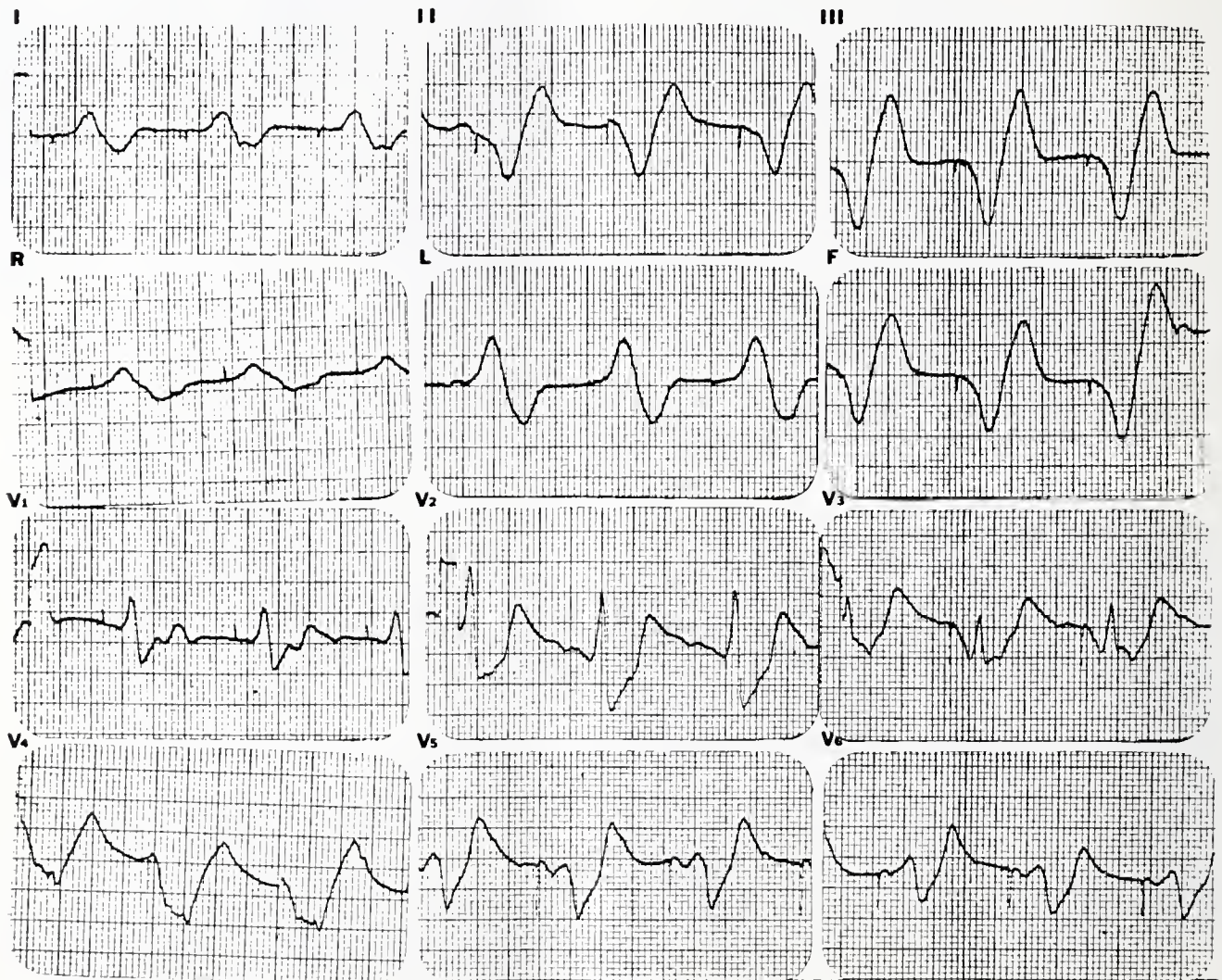
# OF THE MONTH

The Department of Cardiology, University of Arkansas College of Medicine

(See Answer on Page 79)

**HISTORY:** Mr. B. is a 50-year-old man who has a permanent transvenous demand ventricular pacemaker. He sustained a crush injury in an accident and developed oliguria and an increasing serum creatinine. An electrocardiogram done two months prior to the current illness shows a pacemaker rhythm at a rate of 72 beats per minute with a QRS duration of 0.16 seconds. His electrocardiogram is shown. Based upon the clinical setting and the ECG shown, which of the following statements are true and which are false?

1. The pacemaker has failed.
2. The patient most likely had a bundle branch block pattern because of the ventricular pacemaker thus making ECG's useless in this setting.
3. Hypokalemia is likely present.
4. Peaked T-waves are absent making hyperkalemia very unlikely.
5. The patient is most likely hyperkalemic.



John W. Watson, M.D.

Assistant Professor

Division of Cardiology

University of Arkansas for Medical Sciences

4301 West Markham

Little Rock, Arkansas 72201



## Skunk Rabies Epidemic in Arkansas

Thomas C. McChesney, D.V.M.,\* and Paul C. White, Jr., M.D.\*\*

Each year over 100 people in Arkansas receive post-exposure treatment for rabies. Managing those who have possibly been exposed to rabies infection is a perplexing problem facing more and more physicians. In 1978 Arkansas had 163 positive rabies cases making it the highest yearly total for the last ten years.

Looking back to 1961 246 positive cases were recorded. That year there were 107 foxes, 41 dogs, 81 cattle, 7 cats, 1 bobcat, 1 skunk, 1 bat, 1 raccoon, 2 horses, 2 hogs and 2 goats reported rabid. Interestingly, the bulk of the rabies cases in animals has shifted from the fox and domestic dog to the skunk. Of the 163 animal rabies cases last year 147 were rabid skunk. Never before in the state records has skunk rabies reached such epidemic proportions. Although this is a phenomenal increase humans experience a higher exposure rate from their own rabid pets and livestock than from the wildlife that carry the disease.

Statewide annual rabies vaccination of all dogs and cats is necessary to provide an effective barrier between the human population and wildlife rabies. State law requires annual rabies vaccination of dogs and cats, but only about half of the dogs and one-fifth of the cats in Arkansas are vaccinated against rabies.

At the current rate the number of reported cases will reach an all-time high. During January, February and March of 1979 there have been 76 positive rabies cases as compared to 32 cases during the first three months of 1978. Most positive cases now being reported, as well as those of recent years, have been in wildlife, predomi-

nently skunks. It is projected by the end of April this year over 150 cases of animal rabies will have been confirmed in Arkansas. The actual incidence of rabies is undoubtedly higher than the statistics indicate since many cases go unrecorded. Should the rabies virus spill over from wildlife to the domestic animal and human populations—a grave public health situation would exist.

In an effort to learn more about skunk rabies, the UALR Department of Biology, under contract with the Arkansas Department of Health, is conducting an in-depth study of skunk rabies in Arkansas. An international research project (supported in part by the World Health Organization) for development of an oral rabies vaccine for immunizing wildlife is several years from fruition. Although vaccine baits have been developed to immunize foxes these baits produce the infection in non-target rodents which might ingest the baits. It appears that Arkansas will continue to be one of the leading states in incidence of rabies. For the past several years Arkansas has been sixth in the nation, with the prospect of being higher in 1979.

### *Quarantine of Offending Animals:*

Dogs and cats, which have bitten humans, should be confined for ten (10) days from the date of the biting incident to ensure that they are not rabid. Rabid dogs and cats capable of transmitting rabies virus through the saliva will always show symptoms and die within a ten (10) day period; therefore, a healthy animal at the end of a ten (10) day quarantine period is sufficient evidence that the animal is not rabid.

As an alternative if the dog or cat is a stray or the owner no longer desires to keep the of-

\*Director, Veterinary Public Health, Arkansas Department of Health, 4815 West Markham, Little Rock, Arkansas 72201.

\*\*Director, Division of Communicable Diseases, Arkansas Department of Health, 4815 West Markham, Little Rock, Arkansas 72201.



fending animal it may be euthanized, decapitated and the fluorescent antibody (FA) test conducted on the brain tissue. In this manner it can be determined immediately if the animal is rabid.

All wild animals involved in a biting incident should be destroyed and the head submitted for FA testing. There is no standardized or reliable rabies observation period for wild animals. It is believed that carrier states may exist in bats and skunks; therefore, a ten (10) day observation period may be useless.

Rabies is not endemic in rodents. Persons bitten by mice, rats, hamsters, rabbits, squirrels, etc., normally are not recommended for post-exposure treatment unless the animals showed signs of encephalitis or the head tested positive on the FA test. There has never been a human

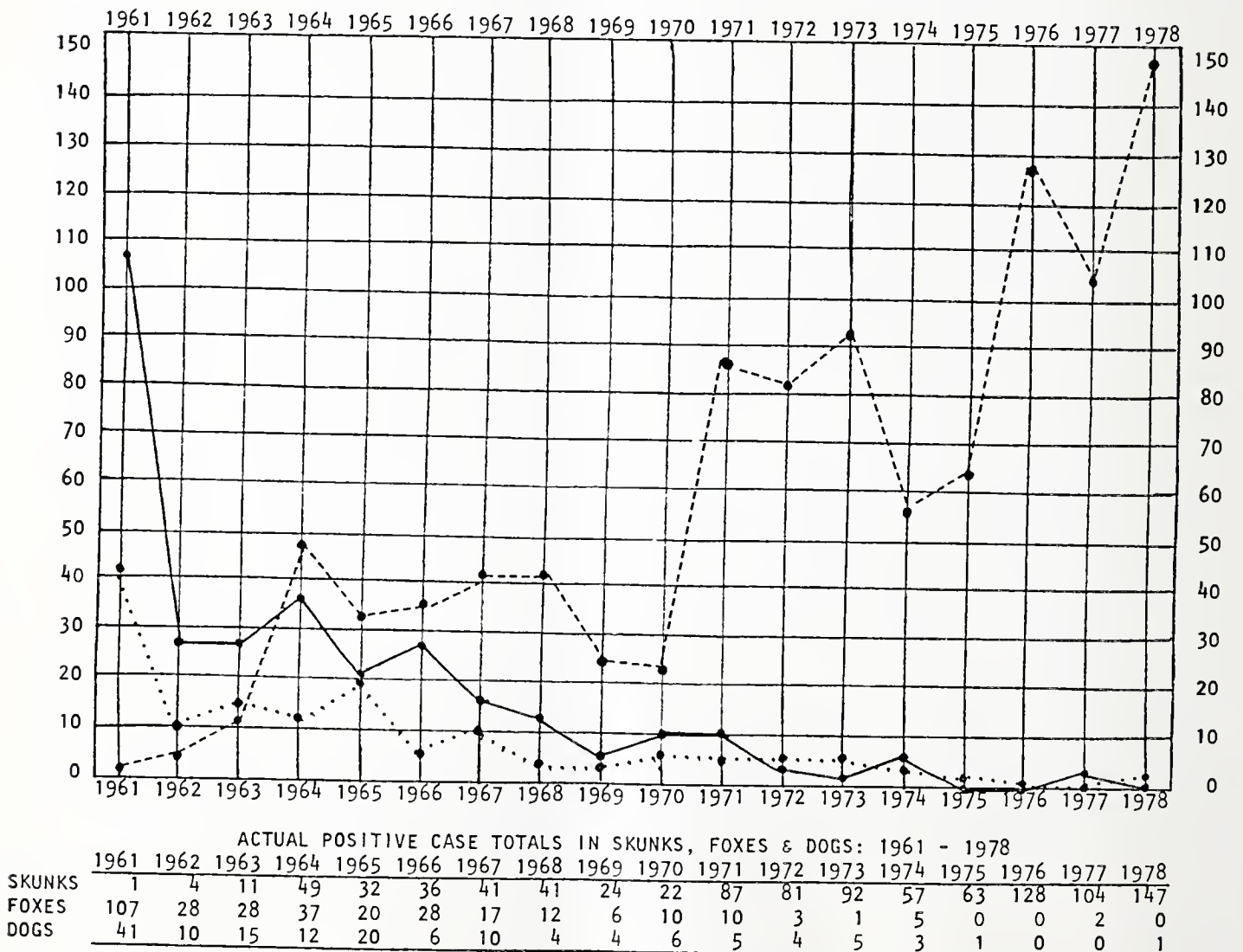
case of rabies in the U. S. from a rodent bite. Annually approximately 24,000 rodent heads are tested with only 3 or 4 positive.

*Pre and Post Exposure Treatments for Humans:*

The Veterinary Public Health Office (VPHO), Communicable Disease Division, Arkansas Department of Health, has developed a condensed version of the regimen recommended by the U. S. Public Health Service Advisory Committee on Immunization Practices (ACIP), which is enclosed with every shipment of rabies vaccine and serum made by the Pharmacy of the Arkansas Department of Health.

The VPHO deals with rabies exposure cases on an almost daily basis and frequently confers with the U. S. Public Health Service Center for Disease Control at Atlanta, Georgia, on such cases.

COMPARISON OF POSITIVE RABIES CASES IN SKUNKS, FOXES & DOGS IN ARKANSAS: 1961 - 1978  
Skunk cases = broken line; Fox cases = solid line; Dog cases = dotted line



TOTALS FOR ALL SPECIES, INCLUDING SKUNKS, FOXES, DOGS, CATS, CATTLE, HORSES, BATS, ETC: 1961 - 1978

1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978
246	70	97	152	99	94	114	65	44	75	139	124	117	80	89	155	125	163

Accordingly, it is the focal point in the state for the latest information on rabies.

In doubtful cases of rabies exposure, physicians are encouraged to call the VPHO for guidance, i.e.: Thomas C. McChesney, D.V.M., State Public Health Veterinarian, Office: 661-2264 or 661-2597; Home: 982-5697; William W. Holtman, D.V.M., Assistant State Public Health Veterinarian, Office: 661-2216, Home: 568-0843. In most cases, Dr. McChesney or Dr. Holtman or someone in the VPHO will be available. If not, guidance will be furnished by Paul C. White, Jr., M.D., Director, Communicable Disease Division office: 661-2316, Home: 227-8701.

Remember, if an exposed person develops the symptoms of the disease before obtaining medical treatment — death is inevitable. Therefore, decisions on management must be made immediately, because the longer treatment is postponed, the less likely it is to be effective.

#### RECAPITULATION OF TREATMENT IS AS FOLLOWS:

1. Pre-exposure immunization for high risk individuals: 4 doses of Duck Embryo Rabies Vaccine (DEV) and blood sample for anti-rabies titer determination. Three injections SUBCUTANEOUSLY at weekly intervals are followed by the fourth dose one month later. Five ml of whole blood should be drawn two weeks later and submitted to the Public Health Laboratory, Arkansas Department of Health, for further shipment to CDC, Atlanta, for a titer determination, which must be 1:16 or greater to ensure protection. If the titer is less than 1:16 an additional booster of DEV should be given and a blood sample taken 2 weeks later.

2. Post-exposure prophylaxis for pre-immunized persons who are later bitten or exposed to a rabid or suspect rabid animal: Six doses of DEV followed by a blood sample. HRIG is not administered. Five daily doses of DEV are followed by a 6th dose 20 days later.

3. Post-exposure prophylaxis for persons having no pre-exposure immunization: The U. S. Public Health Service ACIP no longer recommends the minimum course of treatment, which is set forth in the Physicians Desk Reference. In all cases where post-exposure treatment is indi-

cated, the ACIP recommends the following regimen:

- a. Human Rabies Immune Globulin (HRIG) according to body weight. Two ml per 33 lbs. of body weight given INTRAMUSCULARLY on day one of treatment. If not immediately available, vaccine therapy can be started and HRIG given up until the 8th vaccine dose.
- b. 21 daily doses of DEV given SUBCUTANEOUSLY.
- c. A 22nd dose of DEV ten (10) days later.
- d. A 23rd dose of DEV ten (10) days after the 22nd.
- e. A blood sample for anti-rabies titer determination is drawn when the 23rd dose of vaccine is administered. At least 5 ml of whole blood or 2 ml of serum should be submitted to the Public Health Laboratory, State Health Department, for further shipment to CDC, Atlanta.

#### *Experimental Vaccine:*

Wyeth Laboratories is the sole producer of the Human Diploid Cell Strain Rabies Vaccine (W-HDCS). This is a vastly superior human origin rabies vaccine which could possibly be marketed and available in Arkansas sometime in 1980. W-HDCS with only five (5) injections produces greater antibody response and fewer adverse reactions than the DEV. The vaccine is still in short supply since it is experimental and unlicensed.

Limited experimental stocks are available at the Center for Disease Control and can be obtained by the VPHO for Arkansans severely allergic to DEV or unresponsive to DEV. When W-HDCS is used, HRIG is given INTRAMUSCULARLY according to body weight, as explained above when used with DEV. If the antibody titers are less than 1:16 CDC, Atlanta will release booster doses of W-HDCS vaccine.

The consequences of a more widespread animal epidemic could be devastating in terms of human suffering. The only assured way of keeping rabies in control is to build an effective barrier between the human population and wildlife by immunizing animals yearly. Meanwhile, physicians must face the problem of how to treat persons bitten, scratched, or otherwise exposed to rabies by animals suspected of being infected.



# The Use of Anorectic Controlled Drugs in Bariatric Practice<sup>1</sup>

Don Phillips, R.Ph.\*

For the physician, the obese patient poses one of the most complex problems he is likely to confront. Obesity, itself, presents as a spectrum ranging from mildly inconvenient and/or unattractive "overweight" to massive, and often life-threatening, excess poundage. Its treatment, likewise, involves measures ranging from relatively modest dietary restrictions to intestinal surgery. Above all, obesity almost invariably involves a complex interplay between physiology and behavior, so that the physician must, perforce, combine purely physiological and medical measures with the skills of the psychologist and educator. Largely for this reason there is no "standard" treatment that will serve to manage most obese patients or even a large fraction of them. In each case, treatment must be geared to the specific problems, habits, personality and life style of the patient.

The United States brought action against a physician in bariatric practice who had prescribed several thousand doses of anorectic controlled substance in a short period of time.<sup>2</sup>

The U. S. District Court declared certain minimum standards for prescribing of drugs in bariatric practice and issued an order restraining and enjoining the physician from violating such standards.

Minimum medical standards of practice for a physician treating obesity by dispensing and prescribing large quantities of controlled anorectic drugs, are not met where such drugs are dispensed and prescribed to a large number of patients as standard treatment, nor are standards met where the physician, on a given office visit with the patient, only takes pulse, blood pressure, records weight, makes a stethoscopic examination, conducts a five-minute personal interview, exhibits casual concern as to possible dependency or addiction of the patient to anorectic drugs, and then delivers a recommended diet and prescription for drugs to the patient.<sup>3</sup>

The physician's decision to use an anorectic drug in the treatment of any patient may only

be made after evaluation of the patient's needs, of the risks which such drug poses to the patient, and a determination that the benefit from the use of such drug outweighs such risks.<sup>4</sup>

No standard approach to the treatment of obesity exists, and thus it is improper for a physician in bariatric practice to adopt a single approach to treating obesity involving the prescribing and dispensing of anorectic drugs as a routine part of treatment.<sup>5</sup> The indication for use of amphetamine drugs in the treatment of obesity has been set by the Food and Drug Administration by regulation in Title 21 of the Code of Federal Regulations, Section 310.504.

The regulation requires that the labeling conditions for a single-entity oral dosage form of amphetamine and dextro-amphetamine and their salts shall be labeled to comply with all requirements of the Act and regulations. The label shall bear the indications for use which are: "Narcolepsy; minimal brain dysfunction in children (hyperkinetic behavior disorders) as an aid to general management; and management of exogenous obesity as short-term (a few weeks) adjunct in a regimen of weight reduction based on caloric restriction, for patients in whom obesity is refractory to other measures..."

Other standards include, but are not limited to, the following standards of bariatric practice, as set forth by the American Society of Bariatric Physicians.

## STANDARDS OF BARIATRIC PRACTICE

### A. Initial Patient Work-up

#### 1. History

An adequate history of each patient shall be taken and recorded. It shall include an evaluation of dietary status, weight history, and a history of mental status. When this is a self fill-in, or computerized history, or one taken by assistants, the bariatrician shall personally evaluate significant positive responses and shall make additional notations where appropriate.

#### 2. Physical Examination

##### a. Blood pressure and pulse

\*Director, Bureau of Pharmacy Services, Arkansas Department of Health, 4815 West Markham, Little Rock, Arkansas 72201.

- b. Weight and height
- c. Skinfold measurement(s)  
(recommended)
- d. Observation of general appearance
- e. Head
- f. Neck
- g. Chest—heart and lungs
- h. Abdomen—examined bare with the patient in a supine position
- i. Extremities

The patient's record shall indicate the status of each of these observations separately.

### 3. Laboratory Work

- a. Blood test for anemia
- b. Urinalysis for sugar and protein—(optional if blood urea nitrogen and/or creatinine is/are done)
- c. Blood chemistries
  - 1) Blood sugar following test meal or glucose load; if a single blood sugar is done, the two-hour postprandial blood sugar is suggested.
  - 2) Uric acid
  - 3) Cholesterol
  - 4) Triglyceride
- d. A test specifically designed to determine thyroid function
- e. Additional laboratory work as may be indicated by clinical findings  
(Where feasible, profiles including some or all of these tests in A-3 may yield, at little added cost, additional information on the patient's health status)

### 4. 12-lead ECG

- a. Required if there is reasonable evidence of present or past significant cardiac disease. In addition, the potential value of doing an ECG should be considered if coronary heart disease risk factors are present, e.g., hypertension, hyperglycemia, and certain classes of hyperlipoproteinemia.
- b. Required prior to initiating therapy, if it includes the use of pharmacologic amounts (for the patient) of medications generally recognized as having significant effects on cardiac activity.

When these laboratory tests, or an ECG, have

been done recently by another physician, the bariatrician may utilize these test results, or the ECG, if the same are available and have been personally reviewed by the bariatrician.

### 5. Patient Counseling

Adequate counseling shall be given to patients on proper eating habits and other aspects of treatment prior to the start of therapy.

When the patient has been referred by another bariatrician, who has done adequate work-up and has forwarded significant findings, relevant portions of the initial work-up may be omitted unless such omission is not consistent with generally accepted medical practice in the locale.

### B. Return Visits

The bariatrician shall provide adequate periodic follow-up and counseling for the patient.

### C. Medications

The bariatrician shall weigh the benefits and risks of any medication used. Significant sources of such information include journal articles, experience of colleagues, labeling, textbooks, and personal experience. All of these sources can provide valuable information but no single source should be used to the exclusion of others.

### D. Maintenance

An adequate program shall be provided for helping the patient to maintain the weight loss that has been achieved.

It is perfectly clear that the court by this decree has set these minimum standards of practice as it pertains to the treatment of obesity and the prescribing of controlled anorectic drugs. The physician is obligated to follow these standards of practice and should use these standards as an approach to one of the most complex problems he is likely to confront — THE OBESE PATIENT.

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2. United States of America, Plaintiff, vs. Dr. Louis S. Zwick and Louis S. Zwick, M.D., Inc., Defendants, No. C76-23 A, United States District Court, N.D. Ohio, E. D., April 27, 1976.
3. Comprehensive Drug Abuse Prevention and Control Act of 1970, SS 308, 308(c), 21 U.S.C.A. SS 828, 828(c); Federal Food, Drug and Cosmetic Act, SS 503, 21 U.S.C.A. SS 353.
4. *Ibid.*
5. *Ibid.*





## EDITORIAL

# The Brain

Alfred Kahn, Jr., M.D.

The pursuit of seemingly far-out and esteric medical research often leads to very practical results with a real clinical pay-off. Stockard, Stockard, and Sharbrough have described "Detection and Localization of Occult Lesions With Brainstem Auditory Responses" (*Mayo Clinic Proceedings*, Vol. 52, page 761, December, 1977). They state that the first seven auditory evoked responses which are names "the brainstem auditory response" occur in the first 10 milliseconds of the human auditory evoked response. They further report that these responses are so rapid that they could only reasonably represent brain stem responses. They used scalp recordings to study tumors and diseases which cause loss of myelin. They found an abnormal brainstem auditory response in 37 of 70 patients with suspected multiple sclerosis and without other clinical evidence of brainstem disease. In 14 patients of 40, the brainstem auditory response was the first manifestation of multiple sites of multiple myeloma. Brainstem auditory responses were demonstrated to be abnormal in 12 of 15 cases of subtentorial neoplasm. Of particular interest is a case used by Stockard, et al, in which the patient was symptomatically suspected of having an acoustic neuroma; no signs could be demonstrated. The patient also had negative x-rays, electromyogram, audiogram, and computerized axial tomography; the brainstem auditory response was abnormal and the patient was later found to have an intracranial acoustic neuroma. In their discussion, the authors state that brainstem auditory response should be considered a means of generally localizing a lesion — it is not able to pinpoint locales. Stockard says that hypothermia may produce an abnormal brainstem auditory response; they also quoted a case with almost total paralysis

who had a normal brainstem auditory response — this was attributed to the fact that the auditory pathways were not involved. Ordinarily pathology in the posterior fossa causes changes in the brainstem auditory response because of the "exposed" location of auditory pathways and pressure can be transmitted from pathologic tissue to the auditory pathways even if there is no direct involvement.

Among the brain disorders, none is more mysterious than schizophrenia. This disorder has been reviewed by R. J. Baldessarini (*New England Journal of Medicine*, Vol. 297, page 989, November 3, 1977). He characterized patients with schizophrenia as having misinterpretations, distortions of reality, delusions, hallucinations, etc. The mood tends to be flat. The disease tends to come on in early adult life. Baldessarini says that most cases are either undifferentiated or paranoid. The cause of the disease is totally unknown. One group feels that the disease is genetic and the author concedes that this could be true but no absolute evidence for this exists. A biologic basis for schizophrenia has been sought, but it is hard to pin down. No distinctive pathologic process has been found. Neurochemical techniques have been inconclusive. Hallucinogens have been studied because of the similarity of their effect to that of schizophrenia but again their relationship to schizophrenia seems most obscure. It is felt that monoamine oxidase may play some role in — or be related in some way to — schizophrenia. Treatment consists primarily of drugs like thiorazine, which are not specific at all for schizophrenia; the drugs are described as neuroleptic and are not alone antagonists of dopamine but also cause widespread effects in the central nervous system. The

author describes some of the theories of antipsychotic drug action and states at the outset that the drugs are hard to test on animals because animals do not have schizophrenia. These antipsychotic drugs are different from sedatives in that they affect conditioned reflexes more than unconditioned responses and they have more dampening effect on the forebrain than the brainstem. Some researchers have felt that despite chemical differences this category of drugs took its effect by interfering with synapses. One chemical that these antipsychotic drugs seem to effect is dopamine; these agents are said to increase the speed of evolution of

dopamine metabolites to increase the conversion of tyramine to dopamine and to increase "the firing rate of presumably dopamine containing neuronal cell bodies in the midbrain." Baldesarini says that although many findings indicate that antipsychotic agents seem to impede dopamine as a neurotransmitter this does not prove this effect causes the antipsychotic effect of the drug. He cites that although these effects of dopamine are antipsychotic they are not specifically antischizophrenic. Nor are they really durative. Schizophrenia and its treatment are still somewhat enigmatic — in terms of absolute truths.



## MEDICINE IN THE



### THE MONTH IN WASHINGTON

President Carter used the White House as the setting to launch the Administration's attempt in the new Congress to gain legislative curbs on hospital costs.

According to the President the bill "will be one of the clearest tests of the Congress' seriousness in dealing with the problem of inflation," and "—Hospital inflation is uniquely severe and uniquely controllable."

Standing alongside the President as he spoke were Sens. Edward Kennedy (D.-Mass.), Herman Talmadge (D.-Ga.), Harrison Williams (D.-N. J.), Jacob Javits (R.-N. Y.), Reps. Harley Staggers (D.-W. Va.), Henry Waxman (D.-Cal.), Charles Rangle (D.-N. Y.), Health, Education and Welfare Secretary Joseph Califano and inflation fighter Alfred Kahn.

All expressed support for the bill except for Talmadge who has favored his own approach and did not commit himself.

The measure proposes that federal controls be imposed on hospital expenditures only if hospital spending exceeds a 9.7 percent rate of increase this year, a retreat from last year's call for man-

datory controls at once. In outline the bill resembles the compromise legislation by Sen. Gaylord Nelson that won Senate approval at the end of the last session of Congress, but was not acted on by the House.

The 9.7 percent limit on hospitals rate of increase was arrived at by adding three components:

- an inflation allowance based on the increase in the cost of goods and services purchased by hospitals during 1979. This so-called "market basket" was estimated to be 7.9 percent in 1979. But if the market basket rate of inflation during the year actually changes, corresponding changes would be made in this component of the national voluntary limit. For example, if actual inflation caused the hospital market basket to rise from 7.9 percent to 8.2 percent during the course of the year, then the national voluntary limit would rise correspondingly from 9.7 to 10 percent, the government said.

- an allowance for population growth would be 0.8 percent.

- an allowance for net new services: the cost of additional services (e.g., new technology or



more lab tests) minus savings from increased productivity and efficiency. This net new services allowance would be 1.0 percent.

If the rate of increase in total hospital costs in any state during 1979 is within the national voluntary limit, all hospitals in that state would be exempt from mandatory controls in 1980.

Even if total hospital costs in a state do not meet the limit, individual hospitals would be exempt in 1980 if their rates of increase were at or below the ceiling.

Small non-metropolitan hospitals (under 4,000 admissions), new hospitals (less than three years old), and HMO hospitals (with 75 percent of patients enrolled in qualified HMOs) would be exempt from the mandatory program regardless of their rate of increase in 1979.

Hospitals in states with mandatory cost containment programs of their own could be exempt if the state program met performance standards.

Hospitals not exempted would be given an allowable rate of increase in total inpatient revenues per admission for 1980. This mandatory limit would include a basic limit — comprised of an allowance for inflation and an allowance for efficiency or inefficiency — and adjustment for exceptional circumstances.

Each hospital would be granted an inflation allowance to cover its own market basket price increases (increases in the cost of goods and services purchased). This would include an allowance for the actual rate of increase in non-supervisory wage rates experienced by that hospital.

Each hospital would be given an allowance based upon its efficiency or inefficiency. Efficiency would be measured by comparing the hospital's previous actual costs with those of other hospitals of similar size and location. Efficient hospitals would be given a bonus. Inefficient hospitals would be penalized.

Hospitals with unusual circumstances, such as changes in admissions, would have their basic limit adjusted.

Once the mandatory limit on the allowable rate of increase on total inpatient revenues per admission is established, it would be enforced in two ways:

— the refusal by Medicare, Medicaid and Blue Cross to pay costs in excess of the hospital's mandatory limit; and,

— a 150 percent tax on excess revenues collected by the hospital from other payers, unless these excess revenues are set aside in a special account and used to reduce prices to private patients in future years.

\* \* \* \*

The nation's health organizations immediately went on the attack against the Administration's proposed bill in hearings before the various committees of the House and Senate with jurisdiction over health matters.

Spokesmen for the American Medical Association told Sen. Herman E. Talmadge's Health Subcommittee of Senate Finance that the problem of rising hospital costs is best solved by the private sector.

But there are two other approaches, said Dr. Robert B. Hunter, Chairman of the AMA Board of Trustees — Sen. Talmadge's Medicare-Medicaid Reform measure (S. 505), which "is of national scope and provides for sufficient flexibility"; and the Administration bill, which would impose a mandatory 9.7 percent ceiling on annual hospital cost increases.

Calling Sen. Talmadge's measure a "more positive and equitable legislative approach," Dr. Hunter nonetheless warned that the AMA was "uncertain of the impact." He suggested that if enacted, the bill "be implemented on an experimental basis and demonstrated in a limited geographical area before being considered for nationwide application."

The Administration approach, Dr. Hunter said, is one of "arm-twisting, is not voluntary, and dictates that "you will either reach a 9.7 percent limit 'voluntarily' or you will reach 9.7 percent under heavy penalty as imposed in the bill."

Dr. Hunter called the Administration measure expensive to administer, certain to create new bureaucracy, imposing "almost limitless regulation," quickly resulting in a reduction in the availability of care and bringing about "a rationing of care according to the financial whims of the Secretary of HEW."

"Our bottom line here," Dr. Hunter said, "is the interest of patients."

He pointed to the success with which the AMA, the American Hospital Association and the Federation of American Hospitals, through their organization of the Voluntary Effort, had slowed

increases in hospital expenses by 2.8 percentage points in 1978. "The VE's success can be measured as a savings of \$1.5 billion in the first year alone," Dr. Hunter said.

Yet the President denounces mandatory controls for the rest of the economy, Dr. Hunter said, and calls for voluntary wage and price guidelines "for everyone but the hospital industry."

Dr. James H. Sammons, Executive Vice President of the AMA, also appeared before the Subcommittee. He urged that insufficient reimbursement rates and delays under Medicare be corrected and that Sen. Talmadge also examine the problem of simplifying billing and claims processing procedures, perhaps "even without legislation."

A few days later the same AMA spokesman appeared before Senator Kennedy's Subcommittee on Health and Scientific Research of the Labor and Human Resources Committee and charged the Administration with looking "for a scapegoat for its failing monetary and economic policies generally, instead of dealing with the underlying causes of inflation."

Addressing the Administration's hospital cost containment bill (S. 570), which is sponsored by Sen. Kennedy, Dr. Hunter said:

"Department of Health, Education and Welfare Secretary Califano has told this Committee that the Administration's proposal 'is the most important piece of anti-inflation legislation the 96th Congress will consider.'

"But the bill does not attack the major problems of inflation. Hospital costs are important but they represent about two percent of the total components included in the Consumer Price Index. In other words, the Administration is saying that this Congress will not consider more important anti-inflation legislation affecting the balance—or 98 percent of the elements in the CPI.

"Ninety-eight percent of the economy would not be subject to controls."

Dr. Hunter cited food and housing, "which alone represent about 50 percent of the CPI," as a sector of the economy left to voluntary guidelines "notwithstanding their hefty CPI increases for 1978."

The preference for voluntary guidelines over

mandatory controls has, except for this bill, been the policy of this Administration," Dr. Hunter pointed out.

"Our Association has called upon all physicians to exercise restraint in fee increases. In the hospital sector we joined with the American Hospital Association and the Federation of American Hospitals to form the Voluntary Effort without lowering quality or the availability of care to the American people.

"The goal of VE was to reduce the rate of increase in hospital costs by two percentage points per year during 1978 and 1979. In 1978, the hoped for result would have reduced the rate of increase to 13.6 percent. However, by the end of 1978 the VE had exceeded its goal for that year with a reduction (of 2.8%) from 15.16 percent to 12.8 percent."

The success of the Voluntary Effort, Dr. Hunter said, makes "the irony (of mandatory controls) even greater. . . . The VE is the most effective and responsible action of any portion of the private sector addressing costs. This is not our characterization alone, but the Director of the Council on Wage and Price Stability has also so indicated."

"It is clear that hospitals would have to sacrifice quality were this bill to pass," Dr. Sammons told the Subcommittee. "Only a reduction in quality and rationing of care can result from these controls."

"We do not believe the place to scrimp is in the area of health care," Dr. Sammons said. "Nor will patients—nor should they—be satisfied with equipment that does not provide the latest technology and advanced state of medical treatment and practice."

As to projected cost savings, Dr. Sammons said, "Secretary Califano has projected savings of \$53 billion over the period of 1980-1984. Our preliminary calculations . . . show gross error in those figures. We understand that the Congressional Budget Office has also taken strong issue with the Administration's figures."

Concluding his testimony, Dr. Sammons stated that the entire regulatory process has added tens of billions of dollars to the cost of medical care.

"The costs of regulations are particularly onerous now," Dr. Sammons said, "with the health care dollar becoming limited. Regulatory



costs alone under these present circumstances may lead to rationing of health care."

\* \* \* \*

Most spokesmen for other national health organizations in testifying before the various committees in the House and Senate took much the same line as the AMA.

The bill "is unnecessary, conceptually flawed and would lead to serious disruption in the delivery of hospital care to patients," warned John Alexander McMahon, President of the American Hospital Association.

"This legislation assigns to hospitals the job of rationing without any standards being set to govern who shall get what care . . . any effort to regulate the quantity and quality of treatment without the physician being involved and without standards being set by society raises moral and ethical questions of the first order," declared Michael Bromberg, Executive Director of the Federation of American Hospitals.

The bill could "result in a bureaucratic takeover of the health care field, said John Harty, President of the National Council of Community Hospitals. "This can only result in a freezing of innovation and flexibility."

At the opening hearing on the bill before the Senate Human Resources Subcommittee on Health, a significant development was the hammer and tongs attack on the legislation by Sen. Richard Schweiker (R-Pa.), new ranking GOP member of the Subcommittee.

The Administration, Schweiker said, is more intent on regulating hospitals than on doing anything about inflation. "Overregulation is a cause of inflation, not a cure for it," the Senator said, displaying a marketing cart loaded with federal regulatory rules for hospitals. "The industry already is drowning in regulations," said Schweiker.

Schweiker contended that a crushing amount of paper-work would be needed just to handle the exemptions in the bill. After listing the powers granted the HEW Secretary in the bill, he asked if they did not represent a "rather large grant of power?" Health, Education and Welfare Secretary Califano replied by noting that an advisory commission would oversee the program.

But Schweiker countered by reading the bill's proviso that the HEW Secretary could override

the commission's recommendations any time he chose. This stirred applause in the auditorium of Washington's Children's Hospital where Kennedy held the first hearing.

After the applause quieted, Califano said he thought the American people would rather have the power over hospitals in the hands of "publicly responsible people" than in the hands of "a non-competitive industry."

Schweiker, who became ranking Republican on the Health Subcommittee this year because Sen. Jacob Javits (R-N.Y.), was elevated on another committee, said the Voluntary Effort (VE) to curb hospital expenditures has been "one of the very few creditable private efforts" to stem inflation. The Administration, he said, consistently "has thrown cold water" on the VE rather than encourage it.

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Voluntary health care cost containment actions by hospitals, doctors, insurers and various others across the country saved \$1.48 billion in 1978, according to leaders of the Voluntary Effort (VE) to Contain Health Care Costs. "This \$1.48 billion saving was accomplished through voluntary action" said Paul W. Earle, Executive Director of the Voluntary Effort, in a Washington news conference. "And most importantly, the deceleration in hospital spending is being accomplished without sacrificing the quality of care provided to the American people."

Earle referred to the latest hospital trend data, which show that the rate of increase in hospital expenses is down by nearly three percentage points, to 12.8 percent for 1978, compared with 15.6 percent for 1977. The rate of increase in hospital expenses reflects total economic growth in hospital spending, including general inflation and growth in services due to more people being served, a more aged population, and new technology.

The VE statement was confirmed in part by a report issued last week by the Congressional Budget Office (CBO). The CBO report finds "A preliminary assessment of whether the VE has reduced the growth in costs suggests that the rate of increase in hospital expenditures is lower than it would have been in the absence of the VE." The report states that without the VE, total hospital expenses would have increased at a rate of 14.5 percent in 1978.

However, the CBO report also notes that there is a substantial level of uncertainty in the VE figures on hospital expenditures. "There is a 25 percent chance that the VE did not reduce hospital expenditures," says the report.

In addition, the CBO predicts that the VE goal of holding hospital cost increases in 1979 to just 11.6 percent will be very difficult. "The 1979 goal is not likely to be met for two reasons," says the CBO report. "First, although the program appears to be effective, it is not powerful enough to reduce the rate of increase of hospital expenditures by a full 4 percentage points. Second, inflation will be much higher in 1979 than was expected in December 1977 when the VE was formulated."

"Our goal of limiting hospital expenditure increases to just 11.6% in 1979 will be tough to meet," Earl told reporters, "but we are committed to success."

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President Carter's cost-containing HEW Secretary Califano has announced that the Administration will ask Congress to approve the first phase of a National Health Insurance Plan that will cost an estimated \$10 billion to \$15 billion, starting in 1983.

In a vaguely-worded speech in New York, Califano said the long-awaited Administration plan "will provide significant improvements in health care benefits for the aged, the poor, for employed people and for others who do not have adequate health care coverage."

The additional cost would be paid in part by the government, Califano said, as well as by employers under federally mandated programs.

The Secretary described the plan as a "sensible," "moderate" and not over-costly first step toward Carter's ultimate goal, "universal, comprehensive" national health insurance coverage for everyone.

In his speech, Califano offered only a few brief sentences describing the actual Administration plan. HEW officials said that details of the plan and a bill would not be ready for 60 to 90 days.

\* \* \* \*

Three Republican Senators are the latest entrants in the national health sweepstakes with the introduction of an alternative NHI bill that would rely heavily on private insurers to provide coverage.

Sens. Robert Dole (R.-Kans.), Peter Domenici (R.-N. M.), and John Danforth (R.-Mo.) described their legislation as an alternative to the newly announced Carter Administration bill and one expected soon from Sen. Edward Kennedy (D.-Mass.).

The Dole, Domenici and Danforth bill would:

- expand coverage for those already covered by Medicare.

- ensure that the larger majority of those employed will have private catastrophic insurance made available to them.

- provide for the unemployed or partly employed a voluntary plan whereby they could designate the federal government to financially assist them in contracting with private insurers.

"This proposal will create a health insurance program providing a means for all Americans to protect themselves and their families from financial bankruptcy caused by catastrophic illness or medical expense," said Dole.

A key feature of the legislation proposed that all employers would be required to offer their employees group health insurance with minimal catastrophic benefits.

Employees, however, would be free to choose to participate or not. "This is not a break the bank proposal," said Danforth.

The three lawmakers estimated their proposal would cost \$500 million in fiscal year 1981, then \$3 billion in fiscal 1982. The accumulated cost in the private sector would run from \$3 to \$5 billion annually.

\* \* \* \*

AMA spokesmen testifying before the Senate Finance Committee on the Long-Ribicoff proposal for national catastrophic health insurance and another proposal for federalization of Medicaid urged the Senators to approach the problem via the private sector rather than through the proposed legislation.

AMA spokesman Joseph Boyle, M.D., Los Angeles, CA, and Alan R. Nelson, M.D., Salt Lake City, UT, said that the AMA believes "—that the solutions to the problems that have been identified and addressed in S. 350 and S. 351 should be concentrated in the main in the private sector, building upon a system that is providing the highest quality of health care in the world.



"The private sector can meet the need of insurance coverage for all Americans. The success of the private sector in supplying coverage is well documented by the tremendous growth of private health insurance coverage, both basic and catastrophic, over the past 25 years. This success must be compared with the problems that large scale governmental programs engender, including excess rigidity, red tape, waste and abuse. We believe that governmental support should be provided to finance, as necessary, adequate levels of insurance protection for those unable to afford coverage.

"Mr. Chairman, there is a need to fill gaps in health insurance coverage. We agree that expansion of the availability of catastrophic coverage is necessary. Low income individuals should be brought into the mainstream of health care. We believe that the public should have available and be informed of policies that meet minimum standards. However, it is our belief that these matters can be adequately addressed in the private sector with proper federal encouragement. We urge this Committee to accept these principles and not adopt S. 350 and S. 351."

\* \* \* \*

#### **MEDICAL EDUCATION FOUNDATION**

During the 1978-79 school year, the Medical Education Foundation for Arkansas sponsored eight nationally and internationally known speakers for presentations before the medical students and faculty at the University of Arkansas School of Medicine.

A recent item in the "Medico," the Medical Sciences Campus student publication, acknowledged MEFFA sponsorship of the lecture series and expressed appreciation to MEFFA and the Arkansas Medical Society.

Each dues-paying member of the Arkansas Medical Society supports the Medical Education Foundation for Arkansas as \$5 of the dues assessment goes to MEFFA. The medical student lecture series is one of the many ways in which the Medical Education Foundation for Arkansas is using its funds to better medical education in the State.

Dr. Robert Watson of Little Rock is president of the Medical Education Foundation for Arkansas. He urges members of the medical profession to consider MEFFA when making memorial contributions. Contributions may be

mailed to the Foundation at Post Office Box 1208, Fort Smith, Arkansas 72902.

#### **DR. KAYLOR MEMORIALIZED**

The medical staff of the Washington Regional Medical Center in Fayetteville recently voted to name the Fifth Floor Northwest the Dr. Coy Kaylor Wing. The floor serves the orthopaedic and neurologic patients. An oil painting of Dr. Kaylor and a plaque commemorating his services will hang in the wing.

Dr. Kaylor had practiced thirty years in northwest Arkansas prior to his death about a year ago. Dr. Tom Coker, chairman of the Surgery Department at Washington Regional Medical Center and an associate of Dr. Kaylor's, stated that the Kaylor wing will serve as a reminder of the physician's enthusiasm for life and his concern for his patients.

#### **LITTLE ROCK MEDICAL COMMUNITY HAS RARE CASE**

In February 1979, an infant was born at Doctors Hospital in Little Rock with ectopia cordis. The baby was almost full term, and the birth was preceded by no advance warning of abnormality. Only 146 cases of ectopia cordis have been reported in medical literature since 1641. Dr. G. Doyne Williams, chief of cardiac surgery at the University of Arkansas College of Medicine, headed the surgical team repairing the abnormality. After three surgical procedures, the infant's heart is reportedly in normal position, he is able to breathe without mechanical aids, and is taking food by mouth. The infant was recently released from the hospital.

#### **CENTENNIAL EXHIBIT AT MEDICAL COLLEGE**

As a part of the centennial observance at the University of Arkansas for Medical Sciences campus, an exhibit of the history of medicine and the health related professions has been on display in the lobby of the Education I building at the campus. The exhibit is open to the public weekdays from 8:00 a.m. to 4:30 p.m. until June 30, 1979.

The exhibit, which is entitled "A Century of Achievement," is a self-guided tour which features audiovisual presentation, displays and a computer terminal to query about folk remedies and history of medicine facts. The entrance features the centennial medallions. A facsimile of a typical physician's office about 1900 is included in the display; some of the items used to furnish

the office are pieces actually used by early faculty members of the medical college. Also featured in the exhibit are the diploma of the first graduate of the Medical Department of the Arkansas Industrial University, an examination schedule and a picture of the first graduate, Dr. Thomas Pinson. Some items of interest from today's classrooms are displayed for comparison.

### **GENERAL ASSEMBLY PAYS TRIBUTE TO DR. SHUFFIELD AND THE SOCIETY**

During the 1979 session of the Arkansas General Assembly, the following Senate Concurrent Resolutions, introduced by Senator Max Howell, were adopted.

#### **DR. H. ELVIN SHUFFIELD**

WHEREAS, Dr. H. Elvin Shuffield has been an advisor for many years to the members of the Arkansas General Assembly regarding matters in the field of medicine, and has shared his wisdom in this area when requested by any member; and

WHEREAS, Dr. Shuffield has been a valuable resource for the members of the Arkansas General Assembly; and

WHEREAS, Dr. Shuffield has served for many sessions as the Legislative Liaison for the Arkansas Medical Association and the State Medical Board; and

WHEREAS, Dr. Shuffield has coordinated the efforts of the Arkansas Medical Association in providing staff for the Senate and House Infirmary during the Regular Session of the Seventy-Second General Assembly,

NOW, THEREFORE, BE IT RESOLVED by the Senate of the Seventy-Second General Assembly of the State of Arkansas, the House of Representatives concurring herein:

THAT appreciation is hereby expressed to Dr. H. Elvin Shuffield for his valuable service to the Seventy-Second General Assembly in coordinating the staffing of the Senate and House Infirmary and in serving as an advisor of human health needs.

### **ARKANSAS MEDICAL ASSOCIATION**

WHEREAS, the Arkansas Medical Association has provided one of its member physicians to staff the Senate and House Infirmary each day

the Seventy-Second General Assembly has been in regular session; and

WHEREAS, this service is an appreciated convenience to the members of the General Assembly and has expedited the conduct of the business of the 1979 Regular Session; and

WHEREAS, the individual physicians who have served as "doctor of the day" during the 1979 Regular Session, have served without compensation, and have traveled from all parts of the State,

NOW, THEREFORE, BE IT RESOLVED by the Senate of the Seventy-Second General Assembly of the State of Arkansas, the House of Representatives concurring herein:

THAT the Arkansas Medical Association is hereby commended for its efforts in providing a "doctor of the day" to staff the Senate and House Infirmary during the 1979 Regular Session of the Seventy-Second General Assembly, and appreciation is hereby expressed for the service so provided.

BE IT FURTHER RESOLVED that appreciation is hereby expressed to each member of the Arkansas Medical Association who has served as "doctor of the day" for his unselfish service to the members of the Seventy-Second General Assembly.



### **ANSWER—Electrocardiogram of the Month**

DISCUSSION: The ECG continues to show a paced rhythm at a rate of 72 per minute. The QRS duration, though hard to define, exceeds 0.20 seconds. There is almost a sine curve appearance to the QRST complex in some leads and the T-waves in places appear to originate from the S-wave with apparent obliteration of the S-T segment. These findings are most consistent with hyperkalemia of advanced degree. The presence of the ventricular pacemaker and the resultant bundle branch pattern does obscure the subtle early changes of both hypa and hyperkalemic but the ECG may in part stand as a guide to the effects of therapy. Thus, 1.-4. are all false and 5. is true. This patient was in oliguria renal failure and had a serum potassium of 10.5 meq/liter.



# keeping up

## Category 1 Continuing Medical Education Programs Available in Arkansas

### ANTIBIOTIC UPDATE — CEPHALOSPORIOSIS AND AMINO GLYCOSIDES

Presented by Drs. Arthur E. Squire and T. Ben Wilson, 6:00 p.m., July 16, 1979, Memorial Hospital, North Little Rock. One hour Category I credit.

### RECURRING EDUCATION PROGRAMS

Unless otherwise indicated, programs are for one to one and one-half hours Category I credit.

*INTERHOSPITAL GI PROBLEMS CONFERENCE*, First Monday of each month, 6:00 p.m., St. Vincent Infirmary, Little Rock.

*PERIPHERAL VASCULAR DISEASE CONFERENCE*, Second Monday of each month, 6:00 p.m., St. Vincent Infirmary, Little Rock.

*PULMONARY CARE CONFERENCE*, Tuesday of each week, Noon until 1:00 p.m., Dining Room #4, Baptist Medical Center, Little Rock.

*INTERHOSPITAL UROLOGY GRAND ROUNDS*, First Tuesday of each month, 5:30 p.m., St. Vincent Infirmary, Little Rock.

*CENTRAL ARKANSAS PRIMARY CARE CONFERENCE*, Second Tuesday of each month, 7:00 p.m. to 9:00 p.m., Baptist Medical Center Auditorium, Little Rock. Two hours Category I credit or two hours AAFP prescribed credit.

*NEUROPATHOLOGY CONFERENCE*, Third Tuesday of each month, 5:00 p.m., St. Vincent Infirmary, Little Rock, Arkansas.

*CARDIOPULMONARY RESUSCITATION COURSE*, Second Wednesday of each month, 6:30 p.m. to 10:30 p.m. Human Resource Development Area, Baptist Medical Center, Little Rock. Four hours Category I credit or four hours AAFP prescribed credit.

*MORBIDITY AND MORTALITY CONFERENCE*, First Thursday of each month, 8:00 a.m. to 9:00 a.m., Conference Room #1, Baptist Medical Center, Little Rock.

*SURGERY CONFERENCE*, Second, Third, and Fourth Thursday of each month, 8:00 a.m. to 9:00 a.m., Conference Room #1, Baptist Medical Center, Little Rock.

*PULMONARY CONFERENCE*, First and Third Thursday of each month, 12:00 Noon, St. Vincent Infirmary, Little Rock.

As organizations accredited for continuing medical education by the Liaison Committee on Continuing Medical Education, the organizations named certify that these continuing medical education activities meet the criteria for the credit hours specified in Category I of the Physician's Recognition Award of the American Medical Association.



## THINGS



## TO COME

### UROLOGIC ONCOLOGY SEMINAR

The University of Texas System Cancer Cen-

ter, M. D. Anderson Hospital and Tumor Institute, will present the Fourth Annual Urologic Oncology Seminar July 12-14, 1979, at the Shamrock Hilton Hotel in Houston. The program meets criteria for 18 hours Category I credit for AMA Physician's Recognition Award. For additional information, write Department of Urology at M. D. Anderson Hospital, 6723 Bertner, Houston 77030.



## PERSONAL AND NEWS ITEMS

### RETIRED DOCTOR HONORED

Dr. John Ashby, retired from forty-two years of practice in Benton, was recently presented a plaque of appreciation and a gift from the staff of Saline Memorial Hospital.

### DOCTOR LOCATES

Dr. Pham Anh has opened a new clinic for the practice of general medicine in Marvell.

### PHYSICIANS NAMED DIPLOMATES

Drs. J. Arnold Henry of Russellville, Gene Ring of Dardanelle, James T. Russell of Prescott, Rodney Griffin of Magnolia and Eugene Shaneyfelt of Blytheville have been named diplomates of the American Board of Family Practice.

Dr. Donald L. Dunn of Russellville has been certified as a diplomate of the American Board of Obstetrics and Gynecology.

### DOCTOR SPEAKS

Dr. Ben Saltzman recently addressed the Osceola Kiwanis Club, speaking on the history of the University of Arkansas for Medical Sciences. Dr. L. D. Massey of Osceola was program chairman.

### PHYSICIAN DISCUSSES ABORTION

Dr. Amail Chudy, a North Little Rock Family Practitioner, discussed the medical aspects of abortion in Arkansas during a recent meeting of the Park Plaza Lions Club in Little Rock.

### DOCTOR NAMED CHAIRMAN

Dr. Robert McKinney of Greenwood has been named chairman of the South Sebastian County Cancer Crusade for 1979.

### DOCTOR SPEAKS ON MICROSURGERY

Dr. Edward R. Weber, Jr., assistant professor of Orthopedic Surgery and head of the hand surgery section at the University of Arkansas College of Medicine, recently addressed students at the University of Arkansas describing his techniques in microsurgery.

### PHYSICIAN ADDRESSES HOSPITAL AUXILIARY

Dr. James Y. Massey of Mountain Home was guest speaker at the North Central District meeting of the Arkansas Hospital Association recently.

### DOCTOR ELECTED

Dr. Ben Saltzman of Little Rock was elected president of the board of directors, Arkansas Endowment for the Humanities, during its recent meeting in Hot Springs.



## NEW MEMBERS

The Craighead-Poinsett County Medical Society has added five new members to its membership roll:

### DR. E. PAUL REID

Dr. E. Paul Reid was born in Toronto, Ontario, Canada. He attended the University of Toronto for his pre-medical education. Dr. Reid served in the Royal Canadian Air Force from 1959 to 1966. He received his medical degree from the University of Toronto Faculty of Medicine in 1962. Dr. Reid interned at Toronto Western Hospital and completed a residency in 1971 at Kingston General Hospital, Kingston, Ontario.

Before coming to Arkansas, Dr. Reid practiced seven years in Etobicoke, Ontario.

Dr. Reid is a fellow of the Royal College of Surgeons of Canada, and the American College of Obstetricians and Gynecologists, Toronto Society of Obstetricians and Gynecologists, Ontario Medical Association and Canadian Medical Association.

Dr. Reid is board certified by the Royal College of Surgeons of Canada. He is an Obstetrician-Gynecologist at 3100 Apache Drive, Jonesboro.

### DR. MICHAEL MACKEY

Dr. Michael Mackey attended Hendrix College, receiving a B.A. degree. He then received



## NEW MEMBERS

his M.D. degree from the University of Arkansas School of Medicine in 1973. Dr. Mackey served his internship at the University of Arkansas Medical Center, where he also completed an Internal Medicine residency. He completed a Nephrology residency at the Little Rock Veterans Administration Hospital.

Positions held by Dr. Mackey include Assistant Clinical Professor of Medicine at the University of Arkansas School of Medicine and Director of the Hemodialysis Unit at St. Bernard's Regional Medical Center in Jonesboro. He is a member of the American College of Physicians.

Dr. Mackey is board certified in Internal Medicine. He is in the practice of Nephrology and Internal Medicine at 311 East Matthews, Jonesboro.

### **DR. JAMES W. MOFFAT**

Dr. James W. Moffat is a native of Vancouver, British Columbia, Canada. He was graduated in 1957 with a B.S. degree from Loyola University at Los Angeles. He received his medical degree in 1962 from St. Louis University School of Medicine, St. Louis, Missouri. Dr. Moffat then served in the United States Navy until 1966. He served his internship at the United States Naval Hospital in Oakland, California.

Dr. Moffat had practiced in Westminster, California, for twelve years prior to his coming to Arkansas. He is board certified in Family Practice and a member of the American Academy of Family Practice.

Dr. Moffat is a Family Practitioner at 3100 Apache Drive, Jonesboro.

### **DR. MICHAEL E. CRAWLEY**

Dr. Michael E. Crawley was born in Forrest City. He attended Ouachita Baptist University for his pre-medical education. He then received his M.D. degree in 1975 from the University of Arkansas College of Medicine. Dr. Crawley received his internship and residency training in family practice at the University of Arkansas Medical Center.

Dr. Crawley is board certified in Family Practice and a member of the American Academy of Family Physicians. He is in Family Practice at 3100 Apache Drive, Jonesboro.

### **DR. JOHN H. BUCKNER**

Dr. John H. Buckner's hometown is Knoxville, Tennessee. He was graduated in 1970 from the University of Tennessee College of Pharmacy. Dr. Buckner received his medical degree from the

University of Tennessee College of Medicine, Memphis, in 1974. He served his internship at City of Memphis Hospital and then completed a Radiology residency in Memphis.

Dr. Buckner is board certified in Radiology and practices at 828 Cobb Street, Jonesboro.

\* \* \* \*

### **DR. LOIS A. RITCHIE**

Dr. Lois A. Ritchie, born in Oakland, California, is a new member of the Clark County Medical Society. She received a B.S. degree in 1959 from Walla Walla College in Washington. She then received her medical education from Loma Linda University School of Medicine, Loma Linda, California, graduating in 1963. Dr. Ritchie interned at White Memorial Hospital, Los Angeles, and then completed a Family Practice residency at Stanislove County Hospital, Modesto, California.

Prior to coming to Arkansas, Dr. Ritchie practiced four years at Port of Spain Community Hospital, Trinidad, West Indies, and seven years at Loma Linda University. She was Associate Professor of Family Practice at Loma Linda University from 1972 to 1975 and Director of the Family Practice Residency Program at Riverside General Hospital from 1974 to 1976.

Dr. Ritchie is a member of the American Academy of Family Physicians. She is certified by the American Board of Family Practice. Dr. Ritchie practices at Arkadelphia and at the Amity Family Health Center in Amity.

### **DR. C. MACK SHOTTS**

The Greene-Clay County Medical Society has added Dr. C. Mack Shotts to its membership. He is a native of Dublin, Georgia. Dr. Shotts was graduated in 1972 with a B.S. degree from the University of Arkansas at Little Rock. He attended the University of Arkansas College of Medicine, receiving his M.D. degree in 1976. He completed a two-year Family Practice residency at the Fort Smith Area Health Education Center.

Dr. Shotts is in Family Practice at #1 Medical Drive, Paragould.

\* \* \* \*

The Pulaski County Medical Society has two new members:

### **DR. JOHN G. WATKINS, III**

Dr. John G. Watkins, III, whose hometown is Little Rock, received a Bachelor of Science degree from the University of Arkansas in 1969. He was graduated from the University of Arkan-

## NEW MEMBERS

sas School of Medicine in 1973. Dr. Watkins interned at St. Vincent Infirmary and completed an Ophthalmology residency in 1979 at the University Medical Center.

Dr. Watkins is a member of the American Ophthalmological Society. He is in the practice of Ophthalmology at 230 Doctors Park Building, Little Rock.

### DR. WILLIAM J. WETZEL

Dr. William J. Wetzel was born in New York City. He received a B.S. degree in 1969 from the Rensselaer Institute, Troy, New York. Dr. Wetzel then received his medical degree in 1973 from Albany Medical College of Union University, Albany. He served his internship and completed a four-year residency in Pathology at the University of Florida, Gainesville.

Dr. Wetzel is a board certified Pathologist and is presently on the faculty of the Pathology Department at the University of Arkansas College of Medicine.

\* \* \* \*

### DR. RICHARD J. LOMBARDO

A native of Manchester, Connecticut, Dr. Richard J. Lombardo is a new member of the Randolph County Medical Society. He attended Trinity College, Hartford, receiving a B.S. degree in 1966. He received his medical degree in 1970 from the College of Medicine and Dentistry of New Jersey, Newark. Dr. Lombardo interned at St. Elizabeth's Hospital, Elizabeth, New Jersey. He served in the United States Navy from 1971 to 1973, after which he completed a residency in Obstetrics and Gynecology at New Britain General Hospital of the University of Connecticut.

Before coming to Arkansas, Dr. Lombardo practiced for five years in Millington, Tennessee. He was Chief of Staff at Tipton County Memorial Hospital, Covington, Tennessee.

Dr. Lombardo is a diplomate of the American Academy of Family Practice. He is in Family Practice at the Medical Arts Center, Pocahtontas.

### DR. DAVID HERMAN WEED

Dr. David Herman Weed, born in Columbus, Ohio, is a new member of the White County Medical Society. He attended Ohio State University, receiving a degree in Biochemistry in 1972. He was graduated from the Ohio State University College of Medicine in 1975. Dr. Weed received his internship and residency training at Baylor College of Medicine, Houston. He

is a member of the American Academy of Pediatrics.

Dr. Weed is a Pediatrician at the Searcy Medical Center, P.A., 2900 Hawkins Drive.

### DR. LORAIN J. EVANS

The Crittenden County Medical Society has added Dr. Loraine J. Evans to its membership roll. She is a native of Memphis. She received a B.S. degree in 1967 from Newcomb College, Tulane University, New Orleans. Dr. Evans attended the University of Tennessee College of Medicine in Memphis, receiving her medical degree in 1971. She interned and completed a Pediatric residency at City of Memphis Hospital. She also had a Neonatology Fellowship at the University of Tennessee.

Dr. Evans' teaching appointments include Assistant Professor with the Department of Pediatrics at the University of Tennessee, 1976-1978, and Clinical Instructor in Pediatrics at the University of Tennessee, 1979.

Dr. Evans is a Pediatrician at the Crittenden Primary Care Center, 228 Tyler, West Memphis.

\* \* \* \*

Two new members have been added to the Washington County Medical Society membership roll:

### DR. MURRAY A. LITTON

Dr. Murray A. Litton was born in Smackover. He served in the United States Air Force from 1942 to 1945. Dr. Litton received a B.S. degree in 1948 from North Texas State University, Denton. He attended the University of Duesseldorf in Germany, receiving his M.D. degree in 1953. Dr. Litton interned at the Methodist Hospital, Dallas. His residency training in Pathology was at St. Mary's Hospital in Rochester, the University of Texas Southwestern Medical Branch, the Medical College of Georgia, and the Veterans Administration Teaching Group in Memphis.

Before coming to Arkansas, Dr. Litton practiced at the Veterans Administration Hospital, Madison, Wisconsin, for one year and sixteen years in the Laboratory of St. Mary's Hospital, Rhinelander, Wisconsin. Dr. Litton was Assistant Clinical Professor of Pathology at the University of Wisconsin Medical School in 1960-1961.

Dr. Litton is a fellow of the College of American Pathologists and American Society of Clinical Pathologists. He is also a member of the International Academy of Pathology, Minnesota So-



ciety of Clinical Pathologists and the Wisconsin Society of Pathologists.

Dr. Litton is in practice at the Veterans Administration Medical Center, Fayetteville.

**DR. CHARLES W. INLOW**

Dr. Charles W. Inlow's hometown is Bentonville. He was graduated from the University of Arkansas in 1967 with a B.A. degree. In 1971, he received his medical degree from the University of Arkansas School of Medicine. Dr. Inlow served an internship and completed an Internal Medicine residency at the University of Arkansas Medical Center, as well as a Cardiology fellowship.

Dr. Inlow is board certified in Internal Medicine. He is a member of the American College of Cardiology and an associate member of the American College of Physicians. Dr. Inlow is a Cardiologist in Springdale.

\* \* \* \*

**DR. JAMES F. BURTON**

Dr. James F. Burton, a new member of the Garland County Medical Society, was born in Childress, Texas. He attended Southern Methodist University in Dallas for his pre-medical education. Dr. Burton received his M.D. degree in 1973 from the University of Arkansas School of Medicine. He served an internship and completed a Urology residency at the Louisiana State University Medical Center Hospital, Shreveport.

Dr. Burton is in the practice of Urology at the Burton-Eisele Clinic, 101 Whittington Avenue, Hot Springs.

**DR. FREDRICK C. TURNER**

The Baxter County Medical Society has added Dr. Fredrick C. Turner to its membership roll. He is a native of New London, Connecticut. After receiving an A.B. degree in 1964 from Providence College, Providence, Rhode Island, Dr. Turner received his medical degree in 1968 from the University of Texas Medical Branch, Galveston. He served his internship at the University of Missouri Medical Center in Columbus and had one year of Internal Medicine residency at that institution prior to service with the United States Navy at the United States Naval Hospital, Camp Pendleton, California. After his military service, Dr. Turner went to the Veterans Administration Hospital in Boston for training in Gastroenterology. He then returned to the University of Missouri Medical Center and was

chief Resident in Internal Medicine in 1974-1975.

Dr. Turner was on the faculty of the University of Missouri Medical School from 1975 to 1977 as Assistant Professor of Internal Medicine.

Dr. Turner is a member of the American College of Physicians and the American Society for Gastrointestinal Endoscopy. He is board certified in Internal Medicine.

Dr. Turner practices Internal Medicine and Gastroenterology at Highway 201 North, Mountain Home.

**DR. ARTURO P. VENTURINA**

The Sebastian County Medical Society has added Dr. Arturo P. Venturina to its membership. He is a native of San Jose City, Philippines. Dr. Venturina was graduated in 1965, with a B.S. degree from the University of Santo Tomas, Manila. He received his M.D. degree in 1970 from the Faculty of Medicine and Surgery University of Santo Tomas, Manila. Dr. Venturina served an internship at the United States Air Force Hospital in Clark, Wisconsin, and St. Michael Hospital in Milwaukee. He also received his residency training at St. Michael Hospital and at Children's Hospital in Akron, Ohio. He served as chief of Pediatrics at the Public Health Service Hospital in Talihina, Oklahoma.

Dr. Venturina is a board certified Family Practitioner at the Twin Cities Medical Clinic, Huntington.

**DR. JESS D. GREEN, JR.**

Dr. Jess D. Green, Jr., is a new member of the Boone County Medical Society. He was born in Bartlesville, Oklahoma. Dr. Green served in the United States Naval Reserve in active duty from 1943 to 1946. After receiving an A.B. degree from the University of Missouri in 1944, he attended George Washington University School of Medicine, receiving his medical degree in 1950. Dr. Green interned at Kansas City General Hospital. He had one year in Pathology residency at Kansas City General Hospital then was in General Practice at Raytown, Missouri, for one year. Dr. Green had further training in Pathology and a six-months residency in Surgery at St. John's Hospital in Tulsa. From 1957 until 1978, he was practicing Pathology in Bartlesville, Oklahoma. Dr. Green has served as Oklahoma Councilor of the American Society of Clinical Pathologists and Oklahoma Assemblyman for the College of American Pathologists.

## NEW MEMBERS

Dr. Green is a board certified Pathologist in practice at 515 Spring Street, Eureka Springs.

### PULASKI COUNTY

New courtesy members of the Pulaski County

Medical Society are: Dr. Roger Tilley, Intern; Dr. John M. Tune, Internal Medicine resident; Mr. William S. Warren, Freshman medical student; Mr. Anthony Johnson, Junior medical student; and Dr. Michael S. Wolfe, Intern.



## RESOLUTIONS



### DR. NILES C. PEHRSON

WHEREAS, the recent death of Nils C. Pehrson, M.D., a respected member of this Society for the past sixteen years, is noted with sincere sorrow; and

WHEREAS, Dr. Pehrson was serving at the time of his death in a position of leadership on the Society's Executive Committee; and

WHEREAS, he was recognized by his fellow physicians as outstanding in his field of practice, contributing to the betterment of the health of this community.

BE IT THEREFORE RESOLVED:

THAT, this resolution be made a part of the permanent archives of this Society, and

THAT, Dr. Pehrson's family be sent a copy of this resolution as an expression of the Society's sincere sympathy, and

THAT, a copy of this resolution be sent to the Journal of the Arkansas Medical Society for publication.

By Direction of the Memorial Committee  
T. Duel Brown, M.D., Chairman  
Robert Watson, M.D.  
Henry Hollenberg, M.D.  
Pulaski County Medical Society

### DR. EWING M. NIXON

WHEREAS, the members of the Pulaski County Medical Society are saddened by the recent death of their esteemed colleague, Ewing M. Nixon, M.D.; and

WHEREAS, Dr. Nixon had been a member of this Society for forty years and was held in great respect by his fellow physicians for his devotion to the profession; and

WHEREAS, his devotion to the well being of

his patients was recognized with appreciation by those whom he served.

BE IT THEREFORE RESOLVED:

THAT, this resolution be adopted and made a part of the permanent records of this Society; and

THAT, a copy of this resolution be sent to Dr. Nixon's family as a token of our sincere appreciation of his life; and

THAT, a copy be sent to the Journal of the Arkansas Medical Society for publication.

By Direction of the Memorial Committee  
T. Duel Brown, M.D., Chairman  
Robert Watson, M.D.  
Henry Hollenberg, M.D.  
Pulaski County Medical Society



## OBITUARY

### DR. ELMER J. RITCHIE

Dr. Elmer J. Ritchie of North Little Rock died April 21, 1979. He was a native of North Little Rock where he had been in Family Practice for over forty years.

Dr. Ritchie attended Hendrix College and was graduated from the University of Arkansas School of Medicine in 1937. He served his internship at Santa Rosa Hospital in San Antonio, Texas.

Dr. Ritchie was a chief flight surgeon in the South Pacific during World War II. He was a member of the American Academy of Family Practice.

Dr. Ritchie is survived by his wife, Mrs. Leona Ritchie, four sons and six daughters.



# The Maker

## Examining a Few Myths About Prescribing.

Increasing pressure is being put on the practicing physician to prescribe drugs generically. You are told that brand-name products are universally "expensive" and generic versions are relatively "cheap." To make this case, the most extreme (rather than typical) price differentials are cited. Thus, consumers are led to believe that such differentials are commonplace. Even your knowledge and your motives as a physician are questioned.

Understandably, these views have created myths. We think it's time to examine them in the light of all the facts and ramifications.

*MYTH: There are no differences in quality and performance between brand-name products and their generic counterparts. The corollary is that there are no differences among products made by high-technology, quality-conscious, research-based companies and those made by commodity-type suppliers.*

**FACT: The Food and Drug Administration does a good job in monitoring a generally excellent drug supply. Still, it has nowhere near the resources to guarantee the quality and bioavailability of all marketed products at any given time. Just a few months ago, for example, it noted that batches of tetracycline HCl capsules which met official monograph requirements were**



not bioequivalent to a reference product. As you know, there is substantial literature on this subject affecting many drugs, including such antibiotics as tetracycline and erythromycin. The record on drug recalls and court actions affirms strongly that there are differences among pharmaceutical companies and their products. Research-intensive companies have far better records than those that do no research and may practice minimum quality assurance.

---

*MYTH: Industry favors only "expensive" brand names and denigrates all generics.*

**FACT: PMA companies make 90 to 95 percent of the drug supply, including, therefore, most of the generics. Drug nomenclature is not the important point; it's the competence of the manufacturer and the integrity of the product that count.**

July, 1979

# THE JOURNAL OF THE Arkansas MEDICAL SOCIETY

Vol. 76 No. 2

FORT SMITH, ARKANSAS

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**Now, two dosage forms**

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\*Present as 345.9 mg. and 691.8 mg. of the calcium salt of fenoprofen  
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700934



# A character all its own.



Valium (diazepam/Roche)  
is a benzodiazepine with a  
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SCIENTIFIC ARTICLES

Preparing the Colon for Barium  
Enema. Why All the Fuss? ..... 87  
*Wilma C. Diner, M.D.*

Epidemiology of Carcinoma of the  
Colon — With Remarks on the  
Cause, Prevention and  
Early Detection ..... 93  
*E. Clinton Texter, Jr., M.D.*

Review of an Old Test: The  
Tryptophan Test as a Rapid Aid  
in the Presumptive Diagnosis for  
Tuberculous Meningitis ..... 95  
*M. Stephen Gradus, RM(AAM)*

Grand Rounds: "Physiological Basis  
for Diuretic Action" ..... 98  
*Jules B. Puschett, M.D.*

FEATURES

ECG of the Month ..... 102  
*John W. Watson, M.D.*

Office Orthopaedics: "Evaluation  
of Acute Knee Injuries" ..... 103  
*John G. Slater, Jr., M.D.*

Public Health at a Glance:  
"Arkansas Newborn Transport:  
Saving Lives" ..... 106  
*Phillip J. Mains, R.T., E.M.T.  
and Richard M. Nestrud, M.D.*

Editorial: "Oil Warfare and the  
Physician: The Matter  
of Priorities" ..... 110  
*Alfred Kahn, Jr., M.D.*

Medicine in the News ..... 111

Keeping Up ..... 116

Personal and News Items ..... 118

Things to Come ..... 120

New Members ..... 121

Obituary ..... 123

Resolutions ..... 123

## Preparing the Colon for Barium Enema Why All the Fuss?

Wilma C. Diner, M.D.\*

The radiographic contrast examination of the colon, or barium enema, is one of the most commonly performed radiologic studies in medicine, about 3.4 million being performed yearly in the United States. It is technically fairly easy to perform and yields a high degree of very valuable information. Unfortunately, great inaccuracy can and often does result from inadequate preparatory cleansing of the colon prior to the examination.<sup>5,15,18,22</sup> The radiologist must assume responsibility for the quality and accuracy of these studies,<sup>23</sup> which implies refusal to go ahead in the face of an unclean colon.

### WHY DO WE DO IT?

The most common indication for a barium enema is either to find a cause of rectal bleeding, or to search for a neoplasm of the colon, usually either adenomatous polyp or adenocarcinoma. With the exception of skin cancer, adenocarcinoma of the colon is the most common malignant neoplasm in the United States.<sup>24</sup> Second only to carcinoma of the lung as the cause of death from cancer in men, it is one of the most highly curable cancers known, having an overall surgical cure rate of about 37%.<sup>7,8,15,18</sup> When adequately treated surgically, before there has been extension of the tumor through the entire thickness of the bowel wall, the five-year survival rate is in the range of 72%.<sup>8,15,18</sup> Because colon carcinoma usually manifests itself fairly early in the clinical course by symptoms of rectal bleeding, constipation, diminished stool caliber or anemia, the radiologist has an excellent opportunity to detect the lesion while it is still in this favorable stage. Cancer screening programs by testing of large numbers of people for occult blood in the stools will result in patients presenting even earlier for radiologic examination.

Such a program is beginning in Arkansas now.<sup>26</sup> Because of the curability of adenocarcinoma of the colon in its early stage, it is highly desirable that more attention be given to the colon examination in order to increase its accuracy.<sup>22</sup> Think of how much more is to be gained from diagnosing a small adenocarcinoma of the colon by means of a well-performed barium enema than to spend hours of time, many films, and a great deal of money on a variety of expensive procedures necessary to confirm the diagnosis of a bronchogenic carcinoma.

The radiologic examination of the colon can also be extremely useful in the early detection and differential diagnosis of inflammatory colon disease,<sup>9,10,29</sup> evaluation of diverticular disease, and as an adjunctive study in the evaluation of many other intra-abdominal diseases, including such things as malrotation, displacement or involvement by masses or tumors of other organs, and secondary involvement of the colon by inflammatory processes, such as pancreatitis.

### HOW DO WE DO IT?

The actual performance of a barium enema in the conventional routine fashion is quite simple, given a patient with anal continence and the ability to turn himself partially from one side to the other on the radiographic table. In an average case, the filling of the colon usually takes no longer than two or three minutes including time to obtain spot films of various flexures. It is important to perform careful fluoroscopic observation, to utilize pressure spot films,<sup>6,25</sup> and to obtain a high-quality mucosal study after evacuation. It is extremely tempting in the pressure of a busy department to work very rapidly, to quickly fill the colon and, almost by rote, obtain a series of spot films, then a certain stipulated series of overhead films with the

\*Department of Radiology, University of Arkansas for Medical Sciences, 4301 West Markham, Little Rock, Arkansas 72201.



colon full and following its evacuation. The number of missed lesions under these conditions is probably at least as high as 20%.<sup>15,30</sup>

In recent years, much has been written about the value of the air-contrast barium enema as compared to the routine full-column study for the detection of small polyps and carcinomas.<sup>11, 12, 13, 15, 16, 18, 27, 28</sup> While one report indicates that 7.5% of all colon examinations demonstrated polyps on high kilovoltage full column technique,<sup>6</sup> Welin was able to find them in 12.5% of his air-contrast studies, an incidence comparable to the number found in autopsy series.<sup>28</sup> Having had considerable experience with both types of examination, I, too, am a proponent of the air-contrast study, and I now believe that it should be used as the definitive and initial study in most patients. It must be done with high density barium and multiple films utilizing many positions. Glucagon is often helpful to relax spasm and allow better distention. The rectum should be included in the examination.<sup>10</sup> Indications for this type study include rectal bleeding, history of polyps, suspicion of carcinoma, family history of polyps or carcinoma, search for primary malignancy, previous ureterosigmoidostomy,<sup>21</sup> and early or mild inflammatory bowel disease.<sup>9, 10, 29</sup> In view of this long list, I believe that one really needs to have a reason for *not* doing an air-contrast colon examination in every adult patient rather than a specific indication for doing one. Patients who need not have an air-contrast study, in my view, include the young woman whose colon is being examined simply to help evaluate the nature of a pelvic mass or known gynecologic neoplasm, patients with known or suspected recto-vaginal, recto-vesical or other large colonic fistulae, those with suspected distal colon obstruction, and those who are known to be unable to cooperate satisfactorily for the air-contrast examination, which includes considerable turning over and over on the radiographic table.

#### WHAT MAKES IT SUCCESSFUL?

Regardless of which type is to be done, and whenever evaluation of the mucosa of the colon is needed, which is the case in most examinations, complete cleansing of the colon of all fluid and fecal material is essential to the performance of an adequate high-quality examination.<sup>25</sup> In an attempt to obtain this degree of cleansing, radi-

ologists have utilized virtually every purgative and cleansing agent known to man since the early days of radiology.<sup>1, 3, 5, 21, 26, 17, 18, 19</sup> I personally have had experience with most recommended methods. Many types of preparation are difficult, unpleasant, and inconvenient, especially for elderly or debilitated patients or young children. Patients with heart disease, diabetes, and renal disease are particularly susceptible to the effects of bowel cleansing and associated dehydration. For these reasons, preparation may not be stressed by the patient's referring physician and frequently is not adequately carried out, either by the patient at home or by the nursing personnel in the case of hospitalized patients. Since it is apparent that the referring physician sometimes does not inform the patient of the essential nature of the colon preparation, and many seem willing to accept qualified reports on unsatisfactory studies, one suspects incomplete appreciation of the chance of missing significant lesions. It is well known to any radiologist that when significant amounts of fecal material remain in the colon, it is almost always necessary for the final report to be qualified by such statements as "less than optimal study" or "small mucosal or polypoid lesions cannot be ruled out." Virtually every radiologist with a reasonable amount of experience has at one time or another missed a colonic lesion, either because the lesion was thought to be just another bolus of fecal material or because it was hidden by large amounts of barium or by superimposition of loops or flexures. For these reasons, I wholeheartedly agree with Miller that the radiologist must assume responsibility for the quality of the studies he performs.<sup>15, 18</sup> Knowing the barium enema will not be optimal in the face of inadequate cleansing, he must decline to perform the studies when, for any reason, his instructions have not been followed. He must also be prepared to augment the preparation by properly administered cleansing enemas when necessary. Insistence on such thorough and effective preparation will obviate many repeat examinations. Moreover, the radiologist should indicate in the report that the study is either normal, shows a certain abnormality, or is unsatisfactory and must be repeated.<sup>5, 23</sup> The report should probably describe the adequacy of the preparation, the cooperativeness of the patient, and the degree of certainty about the findings.<sup>2, 23</sup> Such a report as "probably

normal colon," or "feces present, but no abnormality recognized" should never be accepted by the referring physician. Since the advent of colonoscopy, the gastroenterologists, as a group, have become convinced of the necessity of colonic cleansing and have come to realize what is necessary to obtain this degree of cleansing.<sup>6</sup> They have been a help to us radiologists in spreading this "gospel."

**ARKANSAS RADIOLOGISTS SURVEYED**

My conversations with a number of radiologists in Arkansas have suggested that many continue to have problems in obtaining the desired quality of preparation in spite of certain routines which have been established in many hospital departments and offices of radiologists. I, therefore, attempted to survey all radiologists in Arkansas in regard to their experience and attitudes concerning colon preparation for barium enemas. Table 1 shows the responses to the questionnaire, which was sent to 86 radiologists. Thirty-seven responded to the questionnaire. Of these, 62% indicated dissatisfaction with the quality of preparation of many of their patients presenting for colon examinations. There was, however, a great variation in the number of studies repeated because of poor preparation, from less than 1% to 40%, with an average of about 12%. Thirteen of the 37 radiologists recommended a different type of preparation prior to air-contrast studies, which 11 radiologists (or 29%) use as the primary or definitive study. Those who used the air-contrast technique most frequently tended to use it as the primary examination more often. Most of those who use it as the primary study do not feel that a different

type of preparation should be used. Many radiologists (54%) are using variations of the hydration method of preparation, with liquid or low residue diet recommended for 18-22 hours prior to the study. Several suggested the time interval should be longer. A few examiners still prefer castor oil with enemas, sometimes given the previous evening, sometimes the morning of the study. There seemed to be no correlation between the type of preparation used and whether or not the examiner was generally satisfied or felt that there were significant problems regarding the adequacy of preparation.

Certain comments from some of the radiologists responding are of interest. In regard to the hydration method of preparation, one doctor indicated that he was satisfied with it, and that his patients follow the instructions "much better than previous castor oil prep." Another, who repeats about 20% of studies, feels that more *should* be repeated, but stated that the referring physician accepts a guarded report on a poor study. Another stated that less than 5% of his examinations are repeated, because "clinician does not choose to reorder the procedure." Another, who uses the hydration method, said, "... our colon preparation, when it is done adequately, and the procedure followed, has presented no appreciable problems." He continued that a second problem is "... the patient who enters the hospital in the later afternoon or early evening before a barium enema the next morning. ... We find considerable difficulty with the nursing personnel in forcing fluids," particularly in older patients. Several respondents indicated much better results in out-patients who can be instructed by personnel in the Radiology Department, are willing to cooperate, and have more time to do what is necessary. Many indicated that the advent of colonoscopy had not helped in their practice because of its unavailability in their particular area.

**TABLE 1**  
**SURVEY OF ARKANSAS RADIOLOGISTS**

	<i>Total Number</i>	<i>%</i>
Radiologists surveyed	86	
Answers received	37	43
Dissatisfied with		
preparations	23	62
Examinations repeated	1- 40 (Avg. 12)	
Estimated patients who		
follow instructions	5-100 (Avg. 85)	
Proportion of A/C studies	1- 95 (Avg. 21)	
A/C as 1st study	11	29
Different prep. for A/C	13	35
Using "hydration method"		
or modification	20	54

**BEST METHOD OF CLEANSING?**

Since cleaning of the colon depends partly on evacuation of the lower small intestine, a combination of a drug acting on the small bowel with one affecting the colon would be expected to produce additive effects. In the Radiology Department at the University of Arkansas Medical Sciences Campus, the routine in use for the last several years is a modification of the "hydration method" originally described by Brown.<sup>1</sup> It



consists of a liquid, low residue diet for 48 hours (Table 2), forcing large volumes of fluid by mouth for the 12 to 18 hours prior to the examination, and the administration of magnesium citrate liquid. Bisolax (bisacodyl plus dioctyl sodium sulfosuccinate) the night prior to the examination, and suppositories the morning of the examination. Detailed instructions are found

TABLE II

**ROUTINE PREPARATION FOR BARIUM ENEMA**

Report to Radiology Department:

Date ..... Time .....

Follow attached diet list beginning two days before your examination (Date .....). Continue this until noon the day before your examination, then begin the following instructions:

1. At 1:00 p.m. drink a glass (8 ounces) of clear liquid.\*
2. At 3:00 p.m. drink a glass (8 ounces) of clear liquid.\*
3. At 5:00 p.m. drink a glass (8 ounces) of clear liquid.\*
4. At 7:00 p.m. drink a glass (8 ounces) of clear liquid.\*
5. At 8:00 p.m. drink the full bottle (10 ounces) of cold citrate of magnesia.
6. At 9:00 p.m. drink a glass (8 ounces) of clear liquid.
7. At 10:00 p.m. take four (4) Bisolax<sup>TM</sup> tablets by mouth. Do not chew or crush tablets. Do not take within one hour of an antacid or milk.
8. At 12:00 midnight (or bedtime) drink a glass (8 ounces) of clear liquid.\*

\*Either water, black coffee, clear tea, bouillon, clear broth, carbonated beverage, strained fruit juice, etc.

**ON THE DAY OF THE EXAMINATION:**

7:00 a.m. Insert suppository in rectum with gentle pressure; **LARGE ROUNDED END FIRST**, after wetting suppository with water. Hold it as long as possible.

7:30 a.m. Drink one and a half glasses of water.

**BREAKFAST:** No solid food; just clear tea, black coffee, strained fruit juice or other clear liquid.

**CAUTION:** Magnesium Citrate should not be used in cases of renal insufficiency. Consult Radiologist for modified preparation instructions.

in Table 3. The use of the liquid, low residue diet and the forcing of fluids is a tremendous help in evacuation of the colon and thus makes the purgation much more effective and better tolerated by the patient. The use of suppositories instead of enemas avoids the adverse effects of enemas shortly before the study, such as air, fluid, and spasm. If supplementary enemas must be given in selected cases, the results are much

TABLE III

**FOR PREPARATION PRIOR TO BARIUM ENEMA:  
LOW RESIDUE FULL LIQUID DIET**

*Breakfast*

Strained fruit juice with 1 tablespoon sugar added

Strained cereal with 1/4 cup cream and 1 tablespoon sugar added

Coffee — sugar

*10:00 a.m.*

Strained fruit juice or coke

*Lunch*

Strained broth or bouillon

Strained fruit juice with 1 tablespoon sugar added

Fruit juice, ice or jello

Tea — sugar

*3:00 p.m.*

Strained fruit juice with 1 tablespoon sugar added or coke

*Supper*

Same as dinner

*8:00 p.m.*

Strained fruit juice with tablespoon sugar added or coke

*10:00 p.m.*

Jello

Strained fruit juice or coke

*Strained Fruit Juices*

Apple Juice

Grape Juice

Grapefruit Juice (canned)

Grapefruit & Orange Juice (canned)

Lemonade (strained)

Orange Juice (strained)

Prune Juice

Pineapple Juice

Tomato Juice

*Strained Cereals*

Farina

Cream of Rice

Strained Oatmeal

Cream of Wheat

better if the enemas are given in the Radiology Department by specially trained personnel. They should be taught to use intermittent filling and effects of gravity in order to administer a sufficient amount of liquid (1500-2000 cc's) which will be retained long enough (10-15 min. if possible). Forcing oral fluids also prevents the dehydration which can be such a problem in elderly, debilitated, or very ill patients. It should be recognized that forcing fluids may be dangerous to patients in congestive heart failure. Also, magnesium citrate should not be used in patients with severe renal insufficiency. The bisacodyl should be omitted in patients with ulcerative colitis and bloody diarrhea!

This method has afforded better results than any previous one which we have used. There are still some patients in whom the examinations must be postponed or repeated, but this is usually because the instructions have not been properly followed. We find that most out-patients follow our instructions well. There is often a problem with hospitalized patients, related to urgency to proceed with investigations and failure of nursing personnel to force fluids with persistence and persuasion.

### SOME WORDS OF WARNING

It appears to be generally accepted that it is hazardous to perform a barium enema immediately after colonoscopy, and especially so after biopsy, where a delay of 2-7 days is recommended.

The dangers of sigmoidoscopy in this regard are controversial. The disadvantages of performing a barium colon study immediately following sigmoidoscopy include spasm, secretions, and insufflated air. Some radiologists do not object strenuously to this. On air-contrast studies, one puts in air anyway. High density barium adheres to the mucosa better even when secretions are present. Spasm can usually be eliminated by the use of glucagon. However, a much more serious potential contraindication to this practice is the potential hazard of perforation. The incidence of this event is not established, but one cannot help but wonder about some of the reports of perforation, either frank rupture into the peritoneal cavity or dissection of barium into the bowel wall. Did either the distension of the colon or direct trauma of the instrument damage the bowel wall? The necessity of delay of 1-3 days after sigmoidoscopy before performing a

barium enema is still controversial, but I prefer to be conservative; I think it is safer to wait.

### SUMMARY

The barium enema is an extremely valuable radiologic study, the accuracy of which is chiefly dependent upon prior cleansing of the colon. It is the radiologist's responsibility to insist that patients are so prepared, implying that he must be responsible for the type of preparation used, and must decline to perform the examinations when the instructions are not followed and the colon is not clean, unless there is a valid medical contraindication to the preparation.

The "hydration method" of preparation, utilizing liquid and/or low residue diet, large volumes of fluid by mouth, and a combination of cathartics which act on the small bowel and colon, is becoming more popular, and in our experience is most effective. In certain cases in which supplementary enemas are necessary they should be given in the Radiology Department by specially trained personnel.

The author prefers the air-contrast technique advocated by Welin, Miller, Laufer, and others as the "routine barium enema," with full column studies reserved for special circumstances.

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# PREPARING THE COLON FOR BARIUM ENEMA. WHY ALL THE FUSS?

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# Epidemiology of Carcinoma of the Colon-With Remarks on the Cause, Prevention and Early Detection\*\*

E. Clinton Texter, Jr., M.D., F.A.C.P.\*

Epidemiology deals with the incidence, distribution and control of disease in a population. In 1975, Sir Denis Burkitt and Hugh Trowell, using observations based upon long service in black Africa, published a book which suggested that "fibre deficiency" could lead to a group of diverse diseases. These diseases of "western civilization" include diverticulosis, colon cancer, adenomatous polyps, gallstones, hiatal hernia, diabetes and various circulatory problems.

John Cairns of Mill Hill Cancer Laboratories, London, wrote in *Scientific American*, November, 1975, "Almost all cancers appear to be caused by exposure to factors in the environment. The most promising approach to the control of the disease is to identify those factors and eliminate them. . . . Cancer of the large intestine has shown no great change in incidence with time, but it does vary greatly in incidence from one country to another, and that variation should give us some clue to its cause. Generally, the richer the country the higher the incidence. In seeking the cause, it has seemed natural to examine the diet, just as in explaining lung cancer, it seemed reasonable to look for an inhaled carcinogen. The most likely causative agent is the high level of meat in the diet or alternatively a low intake of cereals. One proposed mechanism for the development of cancer of the large bowel suggests that normal intestinal bacteria convert various components of bile into carcinogens. The conversion might be much more extensive with low-residue diets which are known to retard transit of intestinal contents."

Between 1975 and 1978, the scientific community generated the facts to translate Burkitt's and Cairns' theory into scientific reality. Such studies are always necessary to bridge the gaps in epidemiologic studies. Will Rogers said, "All I know is what I read in the newspapers." The perceptive reader of the *Arkansas Gazette* would have noted that Mendeloff of Johns Hopkins called fiber consumption "Protective" (Nov. 2,

1977); that "Colon, Rectal Cancer Related to Diet, Particularly Meat. Beef Is Worse" by Shingleton of the Duke Comprehensive Cancer Center (May 25, 1978); and "More Experts Needed to Study Cancer-Food Links" by Dr. Arthur E. Upton, Director of NCI (June 19, 1978).

The highest incidence of colon cancer is in Connecticut which has the highest meat intake, where the incidence is approaching 40/100,000; the lowest incidence  $< 3/100,000$ , is in Cali, Columbia, and Ibadan, Nigeria, where the diet consists mainly of rice and mandica. In the USA, colorectal cancer is the most common internal cancer with 101,000 new cases and 50,000 deaths per year. The correlation coefficients of environmental factors for colon cancer were for combined fat intake  $+0.87$ , animal protein intake  $+0.86$ , vehicles  $+0.75$ , and vegetable fiber, a strongly negative coefficient. A high-fiber intake worldwide is associated with a low incidence of colon cancer. High fiber prevents adenoma in Bantu and reduces cancer in the face of moderate meat, high-fat diet in rural Finland. Where meat consumption is lowest (in Southern USA) the incidence of colorectal cancer is 22.6% lower; rice consumption in Southern USA is highest. In rural Georgia families where meat consumption in blacks was only 66% of whites, the colon cancer incidence was low (11.1) in blacks as compared to whites (21.0). Modan, et al, in a case-control dietary study of 198 patients with colon cancer as compared to two matched control groups demonstrated a significantly lower ( $6 < 0.001$ ) fiber consumption frequency among colon cancer patients in Israel; no such association was found for stomach or rectal cancer.

Fiber acts in cation exchange fashion, has anti-toxic effects, makes stool pH more acidic interfering with bacterial metabolites and free radicals; biologic sieving by fiber inhibits bacterial growth. Fiber binds bile acids and acts as a chelating agent. Fiber converts deoxycholic acid, a weak carcinogen, to chenodeoxycholic acid. Deoxycholic acid can be converted to methylcholantrene, a potent carcinogen, by bacterial

\*Professor of Medicine, Physiology and Biophysics, Director, Division of Gastroenterology, University of Arkansas for Medical Sciences, 4301 West Markham, Little Rock, Arkansas 72201.

\*\*Presented at the American College of Physicians Meeting, Little Rock, Arkansas, October 6, 1978.



metabolites, nuclear dehydrogenase from *Cl. paraputrificum*.

Total fecal bile acids (also deoxycholic acid) are elevated ( $p < 0.001$ ) in patients with colonic cancer as compared to control patients. Total fecal bile acids (FBA) are elevated in patients with precancerous lesions to 80% that of the cancer patients. FBA (also deoxycholic acid) plotted against  $\log_{10}$  count of nuclear dehydrogenating Clostridia (NDC), both elevated, accurately delineated the colon cancer group with only 9% false positives. Hill, et al, (1975) concluded, "If similar results are also obtained in prospective studies, the possible prevention of large-bowel cancer by dietary changes designed to alter FBA and NDC will have to be considered."

Hill and Morson, et al, (1978) postulated mechanisms for progression from normal tissues to adenoma to carcinoma as follows: An environmental agent A causes adenomas to develop in only adenoma-prone persons. Agent B causes the adenomas to grow; agent C induces malignancy in a large proportion of large adenomas and in a small proportion of small adenomas. "We suggest that factor B is likely to be a bacterial metabolite of the bile acids already incriminated in the etiology of large bowel cancer (the transformation of deoxycholic acid to methylocholantrene). This would prove the link between the (studies of the) epidemiological and pathological studies."

High fiber and high rice intake prevent adenoma formation. Further, Gilbertsen (1974) showed in a 25-year study that periodic proctoscopy with removal of benign polyps reduced the

expected incidence of lower bowel cancer by 85%.

Screening of asymptomatic patients over 40 using Hemoccult II will detect 50% of polyps and 80% of early cancer. We have screened about 3,000 persons out of a proposed 50,000 persons (1 in 20) over age 40 in Arkansas using the network of the Homemakers Extension Clubs, with the University of Arkansas Cooperative Extension Service and the Arkansas Division of the American Cancer Society. All participants are informed of the results of the Hemoccult II test. About 2.5% are positive. For the positive subjects, we are recommending (along with the NCI and ACS) proctoscopy, air-contrast barium enema and colonoscopy. If our studies parallel the results of others, we anticipate finding 20% early cancer, 20% precancerous polyps, 40% colonic diverticula, and 20% false positives.

This is currently a one-year study. Because the demography of Arkansas is so ideal for epidemiologic studies, we are proposing to prospectively extend the study of the cohort for five years quantitating dietary intake of the entire group and the FBA and NDC in the stools of those with positive Hemoccult II tests and some of those with negative tests. The continuation of this study will depend upon our ability to obtain additional outside funding. We already know that both rice and legume consumption are high in Arkansas, and that beef consumption is lower than the USA average. Early detection of cancer in the localized stage has a 90% cure rate. It appears that the tools are at hand to prevent colon cancer, if we can change our dietary habits.



# Review of an Old Test: The Tryptophan Test as a Rapid Aid in the Presumptive Diagnosis for Tuberculous Meningitis

M. Stephen Gradus, RM (AAM)\*

## Summary

The purpose of this report is to review and to show the usefulness of the tryptophan test as an aid in the early diagnosis of tuberculous meningitis. This test was first used by Aiello in 1922.<sup>1</sup> This is an old test and seems to be left out of most clinical microbiology protocol manuals. Its precision and accuracy require that it should be brought to the attention of clinical microbiologists as well as to clinicians.

## Introduction

The mechanism of the tryptophan test is based upon an aldehyde reaction. Indole derivatives, such as tryptophan, give strongly colored products with aromatic aldehydes. The test will detect either free indole derivatives or tryptophan in protein. The source of the tryptophan substance in tuberculous meningitis is unknown. One explanation is that tryptophan, being left free in cerebrospinal fluid (CSF) by non-utilization by *Mycobacterium tuberculosis*, is released by proteolytic action of the infectious process.<sup>2</sup> It has also been suggested that the substance has structural similarities to certain important neurochemicals such as serotonin and melatonin.<sup>3,4</sup>

Cerebrospinal fluid from a 71-year-old male Caucasian was submitted to our laboratory with a request for culture for mycobacteria and tryptophan test. The specimen was cultured and stained by routine procedures for mycobacteria. The stain for acid fast bacteria was found to be negative. The tryptophan test was positive and approximately four weeks later, growth of an acid fast organism was observed and later identified as *Mycobacterium tuberculosis* by the Arkansas State Health Department. A summary of all culture results and tryptophan tests is presented in Table I.

## Materials and Methods

One to three milliliters of CSF were centrifuged at approximately 2600 RPM for 10 minutes in a

model UV IEC centrifuge. To the decanted supernatant 5 milliliters of concentrated HCl for each milliliter of CSF, and three drops of 2% formaldehyde (Scientific Products) were added. The mixture of CSF, concentrated HCl, and formaldehyde was shaken for five minutes. The liquid was then overlaid with two milliliters of 0.06% sodium nitrite (Mallinckrodt) and allowed to stand for two minutes. A delicate violet ring formed at the junction of the fluid in positive reactions and a negative reaction resulted in no color change or a faint brown to yellow. Control specimens used were CSF remaining from routine laboratory studies such as myelograms. Water blanks were also used.

## Results

That the tryptophan test was positive for six weeks was consistent with findings of Luhan and Lanoff who found in seven cases that three months of therapy elapsed before positive tryptophan tests reverted to negative.<sup>2</sup> A possible prognostic value of the test was also indicated by these workers as well as Rosenblatt who found that as the disease progressed, subsequent CSF gave progressively stronger positive reactions.<sup>2,5</sup> This was not noted in the present case as the

TABLE I  
Culture Results and Tryptophan Test Results  
of Cerebrospinal Fluid Tested on Patient  
for Tuberculous Meningitis

Interval in days of lumbar punctures	Culture results	Tryptophan test results
0*	<i>Mycobacterium tuberculosis</i>	Positive
4	<i>Mycobacterium tuberculosis</i>	Positive
8	Negative	Positive
13	Negative	Positive
21	Negative	Positive
46	Negative	Positive

\*One day after first lumbar puncture therapy was started.

\*Supervisor, Clinical Microbiology, Doctors Hospital, 500 South University, Little Rock, Arkansas 72205.



# REVIEW OF AN OLD TEST: THE TRYPTOPHAN AS A RAPID AID IN THE PRESUMPTIVE DIAGNOSIS FOR TUBERCULOUS MENINGITIS

patient recovered. These observations present interesting areas for further study.

## Review of the Tryptophan Test

Clear CSF is essential for a reliable test result. False positive reactions occur in bloody, purulent, and xanthochromic CSF. The color of false positive reactions is often a darker or a "peculiar" purple rather than a delicate violet.<sup>2,5</sup> The sensitivity and the specificity of the tryptophan test has been shown to be exceptionally good when clear CSF is obtained. Aiello, in reviewing the Italian literature, concluded from approximately 1000 tryptophan tests on CSF from patients with tuberculous meningitis that 90% gave a positive reaction, while positive reactions from other conditions were not greater than 2%.<sup>6</sup> Spillane showed 30 CSF to give a positive tryptophan test from 32 confirmed cases of tuberculous meningitis by bacterial isolation, a sensitivity of 94%.<sup>7</sup> Lichtenberg found 25 positive tryptophan tests, 23 of which were subsequently proven to have tuberculous meningitis by autopsy, guinea pig inoculation, or finding the tubercle bacilli in CSF, while two had clinical but no proven tuberculous meningitis for an overall accuracy of 92%.<sup>8</sup> Also, Lichtenberg found 13 false positives occurred but all 13 were either xanthochromic or purulent.<sup>8</sup> Of 12 proven cases of tuberculous meningitis, by autopsy or isolation, Rosenblatt found 12 positive tryptophan tests.<sup>5</sup> In a control group of 45 CSF, four false positive were found, of these four, only the one that was xanthochromic gave a purplish color. In 350 tests, 74 of 75 patients with tuberculous meningitis had a positive tryptophan test with one

false negative (the patient was undergoing therapy).<sup>2</sup> Of false positives, 11 were purulent and seven were xanthochromic.

Examining Table II, it can be seen that from the data of the above investigators, patients with confirmed tuberculous meningitis had a positive tryptophan test from 92%-100%. There were no false positives from clear CSF whereas many occurred from purulent and xanthochromic CSF.

## Recent Findings

Recently a compound, 3-(2'-ketoethyl)indoline or KHI, has been tentatively identified in CSF of patients with tuberculous meningitis by the techniques of frequency-pulsed modulated electron capture gas-liquid chromatography and mass spectrometry.<sup>3,4</sup> This compound is an indole derivative, like tryptophan, and therefore probably would give a positive tryptophan test. It is interesting to note that KHI was not found in 15 cases of cryptococcal meningitis or 14 cases of viral meningitis, but was found in 12 cases of proven and five cases of suspected tuberculous meningitis.<sup>4</sup> Also KHI and a positive tryptophan test both become negative upon effective therapy.<sup>2,4</sup> Even more recently, it has been shown that KHI is present in the CSF of patients with *Haemophilus influenzae* meningitis.<sup>9</sup> However, haemophilus and tuberculous meningitis can usually be distinguished on clinical grounds.

## Discussion

The relationship of a positive tryptophan test and the presence of KHI in CSF of patients with tuberculous and haemophilus meningitis awaits further study. Also, there are certain problems

TABLE II  
Summary of Previous Investigators Findings of Specificity and  
Sensitivity of the Tryptophan Test for Tuberculous Meningitis

Investigator	Specificity		Sensitivity: <sup>1</sup> Clear specimens only	Sensitivity: Including purulent or xanthochromic specimens
	No.	%		
Lichtenberg (1932)	23/25 <sup>3</sup>	92	0/13	13/13
Luhan and Lanoff (1954)	74/75 <sup>4</sup>	99	0/18	18/18
Rosenblatt (1934)	12/12	100	0/45	4/45
Spillane (1937)	30/32	94	— <sup>2</sup>	— <sup>2</sup>

<sup>1</sup> Sensitivity = false positive

<sup>2</sup> Data not given

<sup>3</sup> The two negative tests were from patients with clinical but not proven tuberculous meningitis

<sup>4</sup> The single negative was from a patient undergoing therapy for tuberculous meningitis

accompanying the test such as occasional false positives and the apparent new question of specificity with haemophilus meningitis. However, in spite of these problems, the potential benefit of this test to the neurologically compromised patient cannot be ignored. The simplicity and economical aspects of the tryptophan test make it available and conducive to any clinical laboratory. It is therefore concluded that the tryptophan test for tuberculous meningitis is a useful test for the rapid presumptive diagnosis of tuberculous meningitis and may be an indicator of effective therapy.

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# Medical Grand Rounds

## University of Arkansas for Medical Sciences

### Physiological Basis for Diuretic Action\*\*

Jules B. Puschett, M.D.\*

This discussion will be limited to the theoretical basis and the practical usage of diuretics in the treatment of edema states. Therefore, the employment of these drugs for other specific purposes: for example, hypertension, diabetes insipidus, renal stones, etc., will not be addressed. Turning our attention first to the pathogenesis of edema formation, it is clear that whatever the etiology or clinical setting, the final common pathway is the development of some sort of signal to the kidney which results in the reabsorption of increased amounts of salt and water. In a number of situations, the mechanisms by which this signal is produced, and the pathophysiological train of events which then supervenes, is not clear. However, there are some clues to this which emanate from both the clinical and experimental literature. In order to be able to understand the consequences of the abnormal kidney function which occurs in edema, as well as the site and mechanism of diuretic action, we must first examine normal nephron physiology.

#### Normal Nephron Function

In Figure 1 is presented a diagrammatic representation of the nephron outlining the sites at which the major electrolytes of the extracellular fluid and the tubular water are reabsorbed.

**Proximal Convoluted Tubule.** In the proximal convolution, about 60% to 70% of the salt and tubular water are reabsorbed, along with roughly the same amount of calcium. Virtually all of the phosphate which will be reabsorbed in the nephron is also transported here, along with 80% to 90% of bicarbonate. The majority of sodium reabsorption is accomplished either with accompanying chloride transport (1a) or with the regeneration of bicarbonate (1b). Current evidence suggests that all of the filtered potassium is reabsorbed in this nephron segment.

Therefore, potassium which appears in the urine is that which is added to the tubular contents later on in the nephron.

**Loop of Henle.** The next major transport site is the ascending limb of the loop of Henle (site 2, Figure 1). Whereas in the proximal nephron, salt and water are transported in proportional amounts (isotonic reabsorption), in the thick ascending limb of the loop of Henle, the tubular epithelium is essentially impermeant to water, whereas chloride is actively reabsorbed, taking sodium with it. Therefore, this segment of the nephron serves as a major site at which the urinary contents are diluted. About 15% to 25% of the remaining salt is removed in this portion of the nephron.

**Distal Convoluted Tubule and Collecting Tubule.** In the early portion of the distal convolution is located another transport site (site 3, Figure 1) at which active sodium reabsorption occurs, accounting for approximately another 5% to 10% of the reabsorption of this ion. In the late distal convolution and the early portion of the collecting duct there occurs the reabsorption of sodium in exchange for potassium and/or hydrogen ion (site 4, Figure 1). A portion of this sodium exchange site is under the influence of aldosterone (4a), although mineralocorticoid-independent potassium secretion also takes place (4b). Sodium reabsorption in the late distal convolution and the collecting duct probably accounts for no more than about 2% to 3% of the filtered load of this ion. Water transport in these latter two nephron segments depends upon the availability of antidiuretic hormone (ADH). When ADH is present, the tubular epithelium is rendered permeable to water which then diffuses into the hypertonic medullary interstitium leading to the development of a concentrated urine. However, when ADH effect is absent (as in the water-loaded subject, or in diabetes insipidus) water reabsorption is severely limited and dilute urine results.

\*Professor of Medicine, Director, Renal-Electrolyte Division, University of Arkansas for Medical Sciences, 4301 West Markham, Little Rock, Arkansas 72201.

Edited by Peter O. Kohler, M.D., Professor and Chairman, Department of Medicine, University of Arkansas for Medical Sciences, 4301 West Markham, Little Rock, Arkansas 72201.

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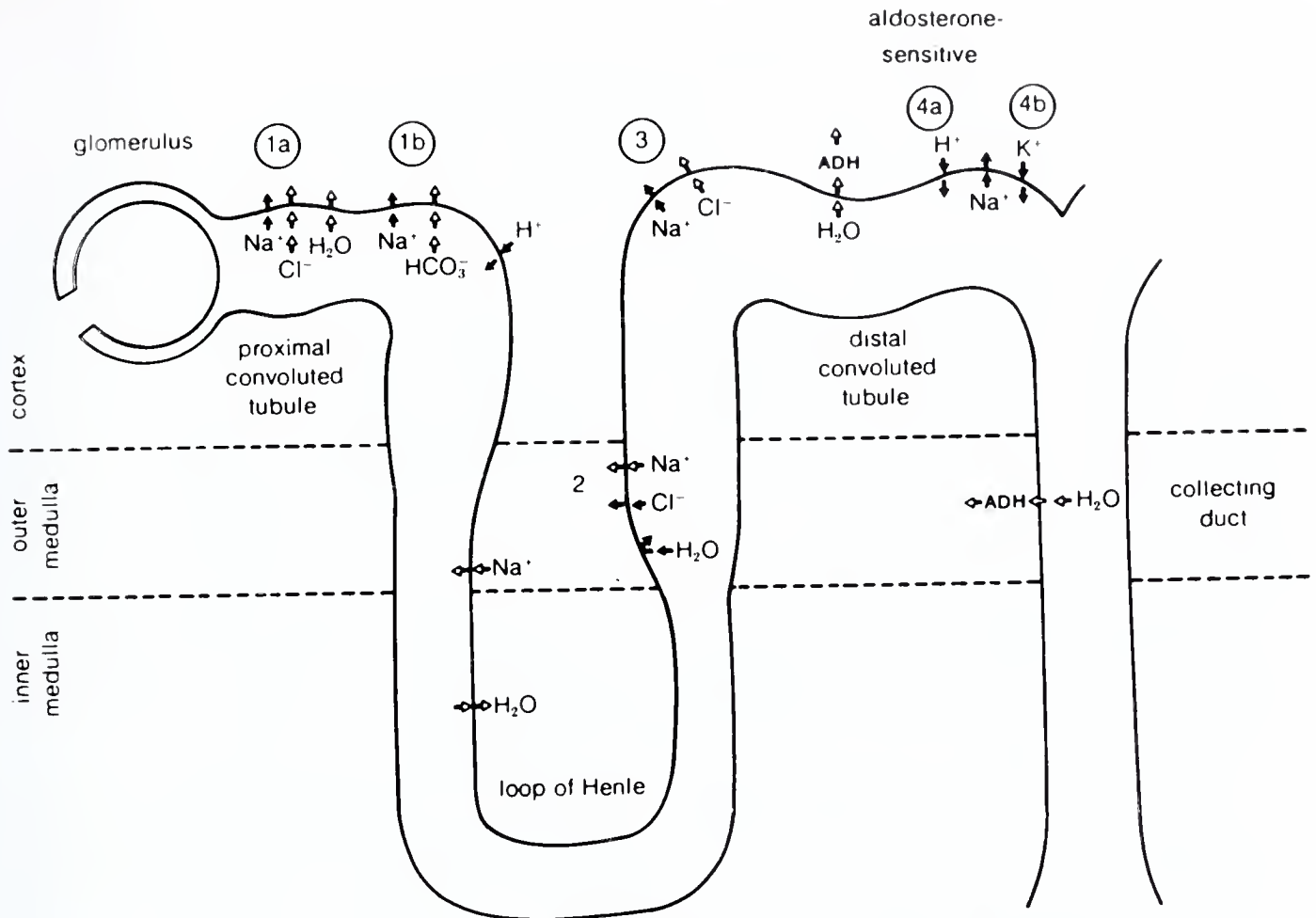


FIGURE 1. The loci of electrolyte and water reabsorption within the nephron. The solid arrows indicate active transport and the open ones depict passive reabsorption. Site 4a is aldosterone-sensitive; 4b is not. Reproduced from *Cardiovascular Medicine* 2:119-134, 1977, with permission of the editors.

### Physiological Implications for Diuretic Usage

What are the practical implications of the normal functions of the kidney as regards edema formation and diuretic usage? First, the problem in edematous subjects is that they are in positive sodium balance. That is, they are taking in more salt than they are excreting. Second, whatever the aberrant sequence of events that leads to this problem, diuretics can often be utilized to circumvent the abnormal retention of salt by inhibiting sodium reabsorption at one or more of the transport sites described above. The following important considerations of diuretic therapy are based on the physiological observations reviewed above. 1) The inhibition of proximal tubular reabsorption by diuretics active at this site (e.g., Diamox, Table 1) may not lead to a major natriuresis. This is because the sodium rejected at this site may be reabsorbed in later nephron segments. 2) The delivery of sodium to the hydrogen-potassium exchange site (site 4, Figure 1) is a major determinant of potassium excretion. Therefore, any drug which inhibits sodium transport in a portion of the tubular

system proximal to this site will cause kaliuresis. Furthermore, the more potent an inhibitor of sodium reabsorption, the greater the kaliuresis which will occur. 3) Those drugs which inhibit sodium transport in the loop of Henle will be potent natriuretics because a) they act at a site beyond which the capacity to reabsorb rejected sodium ions is not great and b) there is substantial salt transport at this site. 4) Since the loop of Henle blockers (ethacrynic acid, furosemide, see Table 1) act at the major site of urinary dilution, they may impair this function of the kidney sufficiently to cause hyponatremia. 5) In some clinical situations, renal blood flow is so compromised that proximal tubular reabsorption is markedly increased. Therefore, distal delivery of sodium from the proximal tubule by a diuretic which acts in this segment, past a loop of Henle which has been blockaded by an appropriate diuretic, may prove successful whereas neither drug alone is effective. 6) Drugs which have the special purpose of reducing potassium excretion, while not themselves potent agents, act at this locus either by competing with aldo-



TABLE I

Reproduced from Reference 1

## Sites of Action and Relative Potency of Diuretics

Agent	Major nephron site of action*	Additional site(s)*	Maximal natriuretic effect (filtered load excreted)
acetazolamide	proximal tubule (1b)	**	5-8%
thiazides	distal tubule (3)	proximal tubule (1b)†	5-8%
metolazone	distal tubule (3)	proximal tubule (1b)†	5-8%
furosemide	ascending loop of Henle (2)	proximal tubule (1b)	20-25%
bumetanide	ascending loop of Henle (2)	proximal tubule (1a)	15-20%
ethacrynic acid	ascending loop of Henle (2)	proximal tubule (1a)	20-25%
mercurials	ascending loop of Henle (2)	proximal tubule [1a]§	15-20%
spironolactone	distal tubule (4a)		2-3%
triamterene	distal tubule (4b)		2-3%
amiloride	distal tubule (4b)		2-3%

\* See Figure 1 for precise nephron site designations.

\*\* Carbonic anhydrase inhibitors impair bicarbonate (and, therefore, sodium) reabsorption throughout the nephron; controversy exists as to the site(s) of reabsorption in the distal nephron.

† Inhibitory effect at this site does not ordinarily contribute to diuresis induced by the drug.

§ Brackets indicate minor activity at the nephron transport site.

sterone (e.g., spironolactone, Table 1) or by directly interfering with potassium secretion (e.g., triamterene).

## Diuretic Side Effects

Many of the side effects of natriuretic agents are the result of an exaggerated response to their administration or to over-aggressive use. The occurrence of shock due to massive natriuresis is rare. However, the development of reduced renal function due to volume contraction, and identified by a rise in BUN (occasionally, also by an increase in serum creatinine) is common. The more potent the diuretic, the greater will be the delivery of sodium to the  $\text{Na}^+ - \text{H}^+ - \text{K}^+$  exchange site. Accordingly, with the development of a major natriuresis, kaliuresis will occur, eventually leading to hypokalemia. In addition, hydrogen ion secretion will be increased at this transport site, resulting in the development of a metabolic alkalosis. Because of hydrogen ion loss, a relative excess of bicarbonate ion occurs. Therefore, appropriate therapy of this disorder involves the use of potassium ion given as the *chloride* (not as bicarbonate).

Hyperuricemia is caused by both volume contraction as well as by competition of certain diuretics with uric acid for excretion by the kidney. Hyperglycemia may occur with the use of the sulfonamide derivatives (e.g., thiazide group). Nephrotoxicity and ototoxicity are espe-

cially noted when the loop blockers are given intravenously, and particularly when their use is combined with that of aminoglycoside diuretics. The development of hyponatremia suggests interference with the diluting segment of the nephron as described earlier (site 2, Figure 1). This complication also suggests markedly compromised distal delivery of salt and water.

## Therapeutic Guidelines

The following rules provide general guidelines for the use of diuretics. 1) Use oral, rather than intravenous drug, whenever possible. 2) Give the smallest effective dose possible: one can always administer more drug, but once given it cannot be recalled. 3) When switching from oral to intravenous drug, reduce the dose. Many patients with edema have problems with GI absorption (presumably due to gut wall edema). Therefore, such patients may respond to much smaller amounts of intravenous drug than that which was ineffective orally. 4) Once the effective dose of a diuretic has been determined, give this amount all at once, rather than in divided doses. 5) Potassium-sparing agents should be used with caution, if at all, in patients with reduced renal function. These patients already have a tendency toward potassium retention related to reduced solute clearance, a consequence of compromised glomerular function. Drugs in this category (which include spironolactone and

triamterene) not only block potassium excretion, but also inhibit the secretion of hydrogen ion into the tubular lumen. Again, this occurs in a clinical setting of reduced glomerular filtration and, therefore, impaired acid excretion. Consequently, not only can these agents induce hyperkalemia, but metabolic acidosis may supervene. 6) In those patients with markedly reduced renal perfusion, blockage of sodium transport at more than one site may be indicated. Thus, combinations of agents which act both in the loop of Henle and proximal tubule may be effective when either agent by itself does not result in a diuresis. For example, the combination of furosemide and metolazone has frequently proved efficacious, in the author's experience.

#### **Nonproprietary Drug Names**

acetanalamide — Diamox, Hydrazol  
amiloride — Colectril

chlorothiazide — Diuril  
ethacrynic acid — Edecrin  
furosemide — Lasix  
metolazone — Zaroxolyn  
spironolactone — Aldactone  
triamterene — Dyrenium

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# ELECTROCARDIOGRAM



# OF THE MONTH

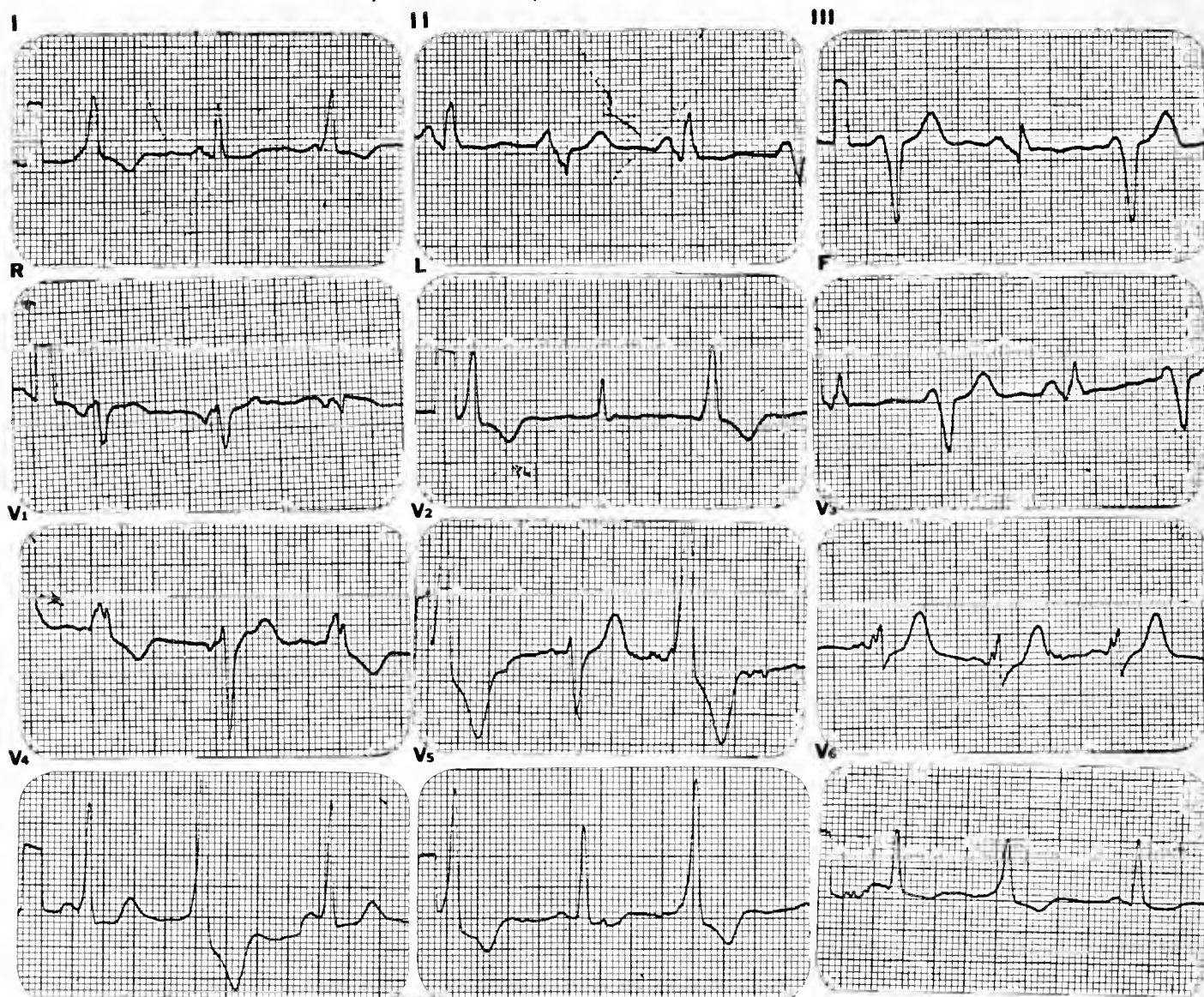
The Department of Cardiology, University of Arkansas College of Medicine

(See Answer on Page 122)

**HISTORY:** Mr. F. is a 57-year-old male who gives a twenty-year history of episodic palpitations. He has never experienced chest pain or syncope. None of the usual cardiovascular risk factors are present. Two years ago, an electrocardiogram was normal except for the presence of a short PR interval. His current ECG is shown.

Which one of the following choices best explains the ECG findings:

- A. Sinus rhythm with interpolated PVC's.
- B. Rate related bundle branch block.
- C. Sinus rhythm with ventricular fusion beats.
- D. Wolf-Parkinson-White Syndrome with possible ectopic ventricular beats.



John W. Watson, M.D.

Assistant Professor

Division of Cardiology

University of Arkansas for Medical Sciences

4301 West Markham

Little Rock, Arkansas 72201





# Office Orthopaedics

## Evaluation of Acute Knee Injuries

John G. Slater, Jr., M.D.\*

Injuries to the knee occur with great frequency in this day when so many, both male and female, are participating in athletic activities. Although football and skiing account for the greatest number of serious problems, knee injuries may result from almost any athletic endeavor, as well as non-athletic activities. Careful evaluation is necessary to arrive at the correct diagnosis, and thus proper management, in order to prevent deteriorating degenerative arthritis in later years.

In evaluating the acute knee injury a careful history is the first step toward arriving upon the correct diagnosis. The mechanism of injury must be reconstructed as well as a description of the pain and its location. Did swelling occur immediately or gradually? Immediate swelling indicates hemarthrosis, which signifies rupture of at least one internal structure of the knee.<sup>4,5</sup> Gradual swelling suggests synovial irritation and possibly meniscal damage.<sup>5</sup> Was there a "pop" during this injury? This is suggestive of ligamentous rupture, particularly the anterior cruciate ligament.<sup>6</sup> What was the patient able to do afterward? There is usually a great deal of pain associated with partial ligamentous injury, whereas sometimes with complete rupture, ambulation can be performed reasonably comfortably as the joint has been decompressed and the hemorrhage escapes into the surrounding tissues. This results in diffuse soft tissue swelling rather than a painful tense hemarthrosis. It is also important to know whether there has been previous injury to the joint.

In the physical examination of the acutely injured knee, several points must be considered.

Firstly, the knee is irritable and the physician will not be able to perform many of the usual testing maneuvers. If there is much effusion, it should be aspirated and the joint instilled with 5 to 10 cc. of Xylocaine, which will make the patient more comfortable and the knee easier to examine.<sup>6</sup> It should be noted whether the aspirate is joint fluid or frank blood, and whether the blood contains fat droplets, which if present is indicative of articular fracture.

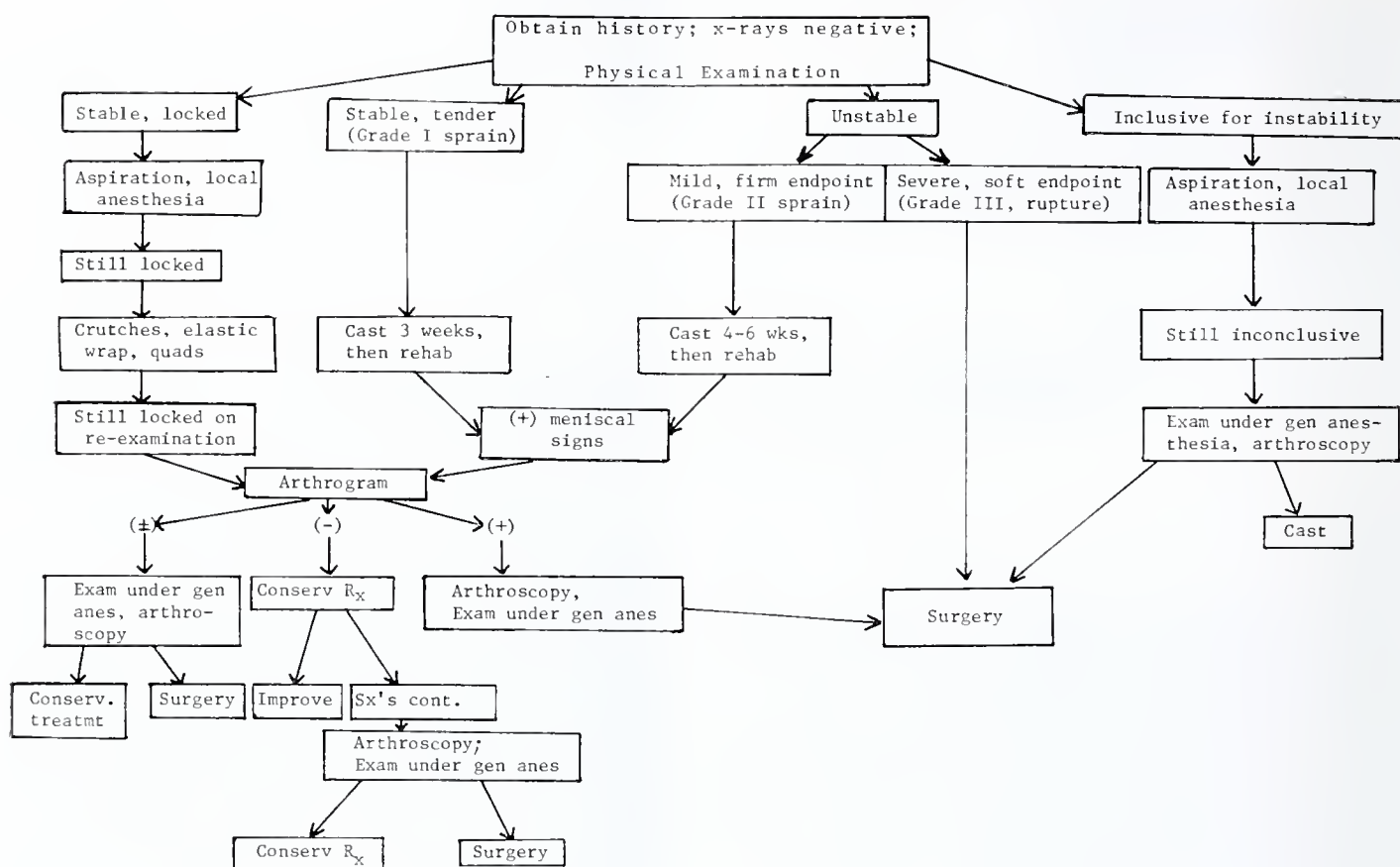
The knee should be inspected for abrasions and ecchymosis and should be palpated for the presence of warmth, comparing to the opposite knee. Careful palpation for tenderness should include the ligaments and their proximal and distal attachments, the joint line, and the parapatellar region. The knee should be gently flexed and extended and range of motion noted. Patella apprehension test should be performed but the McMurray and pivot shift tests most likely will not be tolerated by the patient. Pedal pulses should be checked as knee dislocation with arterial injury may spontaneously reduce and present without deformity.<sup>1</sup>

The major concern of the entire examination is determining whether significant ligamentous damage has occurred, assuming x-rays to be unremarkable as is usually the case. This is because a ruptured ligament requires repair within days for the best result, whereas meniscal tears and other lesions do not necessarily require such prompt definitive treatment.<sup>8,11</sup> The examination of the ligaments should be performed slowly and gently to minimize pain and protective muscle spasm, and the opposite knee should be examined for comparison. The examination

\*1100 North University, Suite 30, Little Rock, Arkansas 72207.



## ACUTE KNEE INJURY MANAGEMENT FLOW SHEET



simply consists of valgus and varus stress testing in full extension and 30 degrees flexion, and the anterior and posterior drawer tests. If there is significant laxity in full extension, major ligamentous damage has occurred involving both the collateral and cruciate ligaments.<sup>2,8</sup> Laxity in 30 degrees only (compared with the opposite knee) implies injury to the collateral ligament while sparing the cruciates.<sup>2,8</sup> A positive anterior drawer sign generally indicates rupture of the anterior cruciate ligament but a negative test does not exclude this possibility.<sup>4,6,8</sup> A positive posterior drawer test indicates rupture of the posterior cruciate ligament, which is the most important ligament in the knee.<sup>2,3,4,6,8</sup> A firm endpoint with stress testing suggests ligamentous continuity, and a soft endpoint suggests rupture.<sup>6</sup> If there is a great deal of protective muscle spasm and testing for instability is inconclusive, the knee should be examined under general anesthesia.<sup>2,10</sup> Although arthroscopy and arthrography are useful adjuncts in evaluating knee injuries, it should be emphasized that the physical examination is the most important aspect of acute knee injury evaluation.

X-rays of the acutely injured knee should be carefully inspected for flecks of bone from the

femoral condyles, tibia, and intercondylar notch area as this represents ligamentous avulsion.<sup>9</sup> Avulsion of bone adjacent to the lateral tibial articular surface indicates severe injury to the anterior cruciate ligament as well as the lateral capsule.<sup>12</sup> However, normal x-rays afford no assurance that severe ligamentous damage to the knee has not occurred and should not lull one into a sense of security. Stress films are advisable in the skeletally immature individual who presents with knee instability as epiphyseal plate fracture is more likely than ligamentous rupture, and may not be apparent on routine films.<sup>1</sup>

### Summary

The most important aspect of evaluating an acute knee injury is the accurate assessment of ligamentous injury. If there is enough ligamentous damage to warrant surgical repair, it is important that this be done within days of the injury as results are much better with early repair than late. One must remember that a negative x-ray offers no assurance of ligamentous stability. Likewise, the ability of the injured person to ambulate without pain or effusion following knee injury does not preclude complete ligamentous rupture. Careful evaluation of acute knee

injuries will lead to correct diagnosis and thus proper management.

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## **Arkansas Newborn Transport: Saving Lives**

Phillip J. Mains, R.T., E.M.T.\*, and Richard M. Nestrud, M.D.\*\*

Sick newborns experience reduced mortality when placed in intensive care level III nurseries. Over the last ten years, this has been proven in areas where intensive care is available. The improvement in neonatal mortality (birth to 28 days of age) is due not only to improved care in nurseries, but also to increased availability of medical care to all neonates, improved prenatal services, and improved obstetrical techniques for high risk deliveries.

Newborn intensive care has recently become a subspecialty of pediatrics (neonatology) due to the exponential increase (indefinite growth rate) in knowledge and expertise in this area over the last fifteen years. Newborn intensive care is very expensive. Therefore, it is unreasonable for many small hospitals that need this high level of care for only a few babies a year.

Transport has become a very important part of providing a high level of care for the newborn. The question of whether to transport the high risk mother prior to delivery or transport the ill infant after delivery is answered in the recognition that the womb is the best transport system available in most cases. However, only about sixty percent of high risk infants can be identified prior to delivery.

The high risk infant often requires transport to an intensive care nursery during the most unstable period of the infant's disease process. This problem requires those involved in neonatal transport to provide a highly sophisticated system with all the life support equipment and personnel that would be found in an intensive care nursery.

Arkansas established a Newborn Transport

Service in September of 1978 through a federal health, education, and welfare grant to the Arkansas Regional Perinatal Program. This system is currently operated by Arkansas Children's Hospital.

The Arkansas Regional Perinatal Program designed the Arkansas Newborn Transport Service to support rural medicine. Inspection of the growth patterns of Arkansas Newborn Transport Service indicates that the administrators of the Arkansas Regional Perinatal Program recognized the needs of rural medicine. Physicians are expected to more readily accept the responsibility of practicing in rural areas with this kind of medical support.

The objectives of Arkansas Newborn Transport are to:

- Provide for complete use of regional centers now available
- Prevent unnecessary duplication of equipment and services
- Educate personnel working with newborns

All of these are an integral part of the ultimate goal to reduce the mortality and morbidity of newborns.

Arkansas Newborn Transport Service is currently available to any nursery in the state requiring its services. Cooperative efforts have been successful in transporting infants to the three maximum level intensive care nurseries in Little Rock (University of Arkansas for Medical Sciences, Arkansas Children's Hospital and St. Vincent Infirmary). In addition, infants have been referred to Union Memorial Hospital in El Dorado and Jefferson County Hospital in Pine Bluff. Each of these facilities utilizes the Arkansas Newborn Transport Service.

\*Coordinator, Arkansas Newborn Transport Service.  
\*\*Medical Director, Arkansas Newborn Transport Service, 804 Wolfe, Little Rock, Arkansas 72201.

**TABLE 1**  
**REFERRAL NURSERIES**

Arkansas Children's Hospital  
1-800-482-1177  
St. Vincent Infirmary  
1-800-482-1288  
U. of A. Medical Sciences Campus  
1-800-482-9921

Availability of bed space can be determined in Little Rock by calling WATS line numbers at the three referral hospitals shown in Table 1. After consultation with the attending physician, the transport is initiated. The receiving hospital assembles the necessary transport crew which consists of various combinations of nurses, respiratory therapists, and physicians as needed. In addition, any special equipment needs are determined at this time.

While the transport team is enroute, the referring physician must make sure that the following materials be assembled to accompany the patient:

- (1) Signed — witnessed — dated releases for transport
- (2) Copies of hospital charts (mother's and infant's)
- (3) All x-rays
- (4) Referring physician's name, address, and phone number (in order that contact can be made immediately upon the patient's arrival at the receiving hospital)
- (5) Instructions on how to contact the parents or responsible family members
- (6) At least five milliliters tube of clotted mother's blood (please label appropriately)

The equipment used in transport does not differ from an intensive care nursery. The ventilators, umbilical catheter trays, warming devices, vital sign monitors are all just as efficient as those used within any intensive care nursery.

Philosophies have caused this service to be an intensive care nursery on wheels. That philosophy is that the level of care an infant receives from Arkansas Newborn Transport Service would never decrease, but rather increase during transport. Therefore, the term "transport" alone is actually not truly descriptive of the Arkansas Newborn Transport Service.

The following types of infants are those best

served by Arkansas Newborn Transport Service:

- (1) Newborns with respiratory distress syndrome or on oxygen therapy for any reason.
- (2) Any newborn or infant with cyanotic heart disease or congestive heart failure.
- (3) Any newborn with surgical emergencies or potential surgical emergencies (such as diaphragmatic hernia, gastroschisis, omphalocele, tracheoesophageal fistula, meningomyelocele, and imperforate anus).
- (4) Any infant less than three (3) days of age or in respiratory distress.
- (5) Any infant less than six (6) months of age with respiratory distress or potential for respiratory distress (such as severe dehydration, AGS in crisis, meningitis, epiglottitis, severe croup, severe pneumonia requiring oxygen).
- (6) Any infant less than one (1) year of age who is on a ventilator.
- (7) All infants of any age less than 1500 grams.

As of May 1, 1979, Arkansas Newborn Transport Service has transported 71 neonates successfully. The state map (Figure 1) shows by county where these transports have occurred. Health service areas are also indicated. Figure 2 shows the number of transports that have occurred per month since the service began in September, 1978.

It has been projected that Arkansas Newborn Transport Service will be providing approximately 300 transports per year by January, 1980. Preparations are constantly being made to provide for more transports than are available, so that Arkansas Newborn Transport Service does not fall behind in its ability to serve.

Arkansas Newborn Transport Service has recently accomplished several transports that were deemed very difficult. During one of these, two babies successfully were ventilated simultaneously without a shortage of oxygen or air. This was accomplished on May 2, 1979, from Union Memorial Hospital in El Dorado to St. Vincent Infirmary in Little Rock. The transport team consisted of members from St. Vincent Infirmary, Arkansas Children's Hospital and UAMS. The total oxygen and air usage was twenty-five percent of the total available.



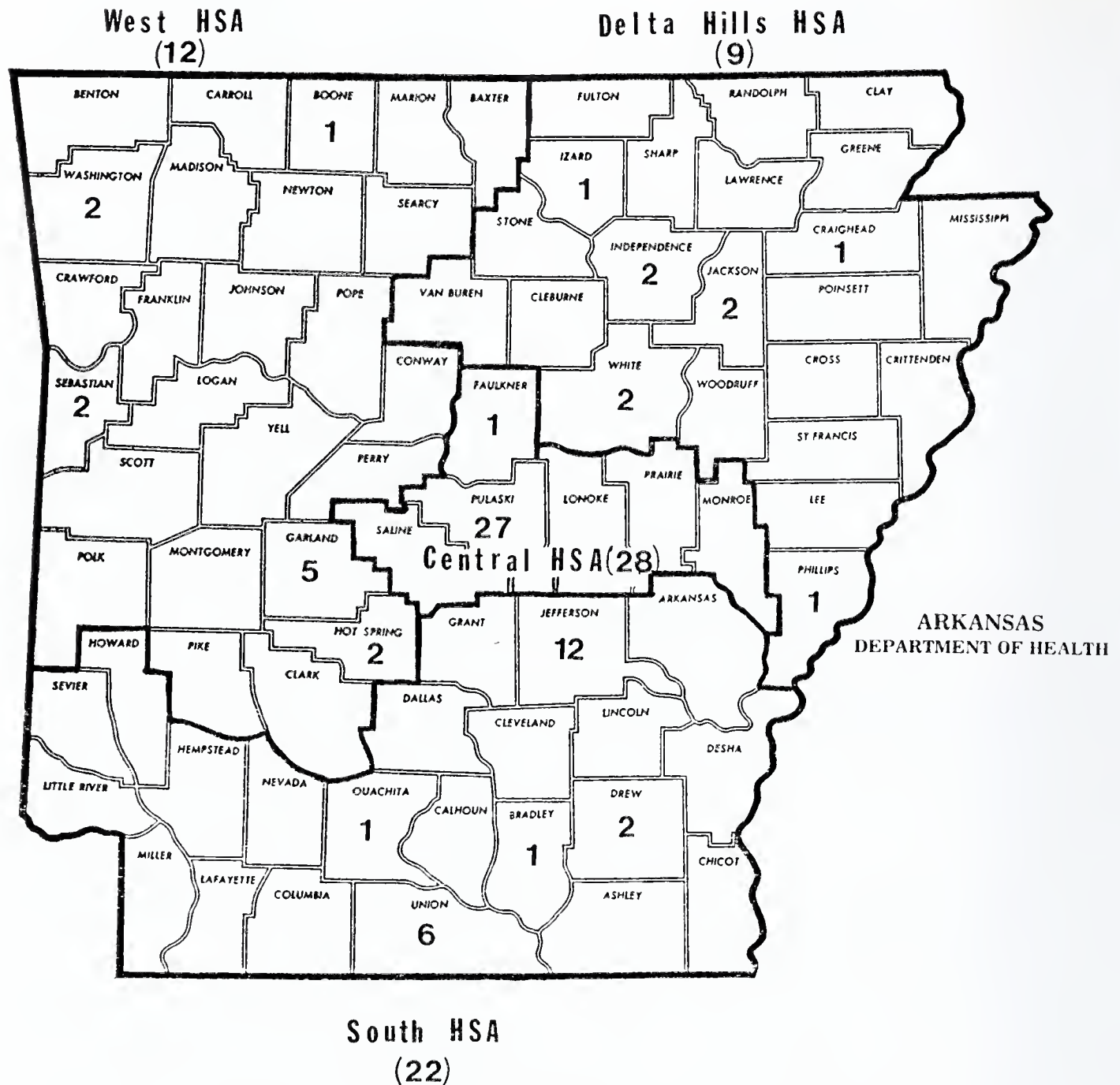


FIGURE 1.

A total of 71 transports of newborns have been accomplished by the Arkansas Newborn Transport Service prior to May 1, 1979. The numbers indicate the number of transports by county and HSA. The 28 transports within the Central HSA were primarily diagnostic movements between hospitals.

On May 4, 1979, Arkansas Newborn Transport Service successfully accomplished a transfer. A baby who was in need of continuous positive airway pressure in a commercial ambulance was transferred to the A.N.T.S. vehicle beside the highway on I-40. This was accomplished while carrying another infant and the van then proceeded to UAMS with two patients.

On February 9, 1979, Arkansas Transport Service participated in a history-making transport. A newborn who had been born with ectopia cordis was successfully transported. The patient, now at home with his parents, is currently

the only known survivor of this anomaly ever to be discharged from the hospital. It is doubtful that the Arkansas Newborn Transport Service will ever again transport a patient with ectopia cordis, but should the occasion arise Arkansas Newborn Transport Service will be ready.

Arkansas Newborn Transport Service is very versatile and is making itself available to many different needs.

The future for this service is bright, particularly with the upcoming state funded construction of a new intensive care nursery at Arkansas Children's Hospital. This will make it the

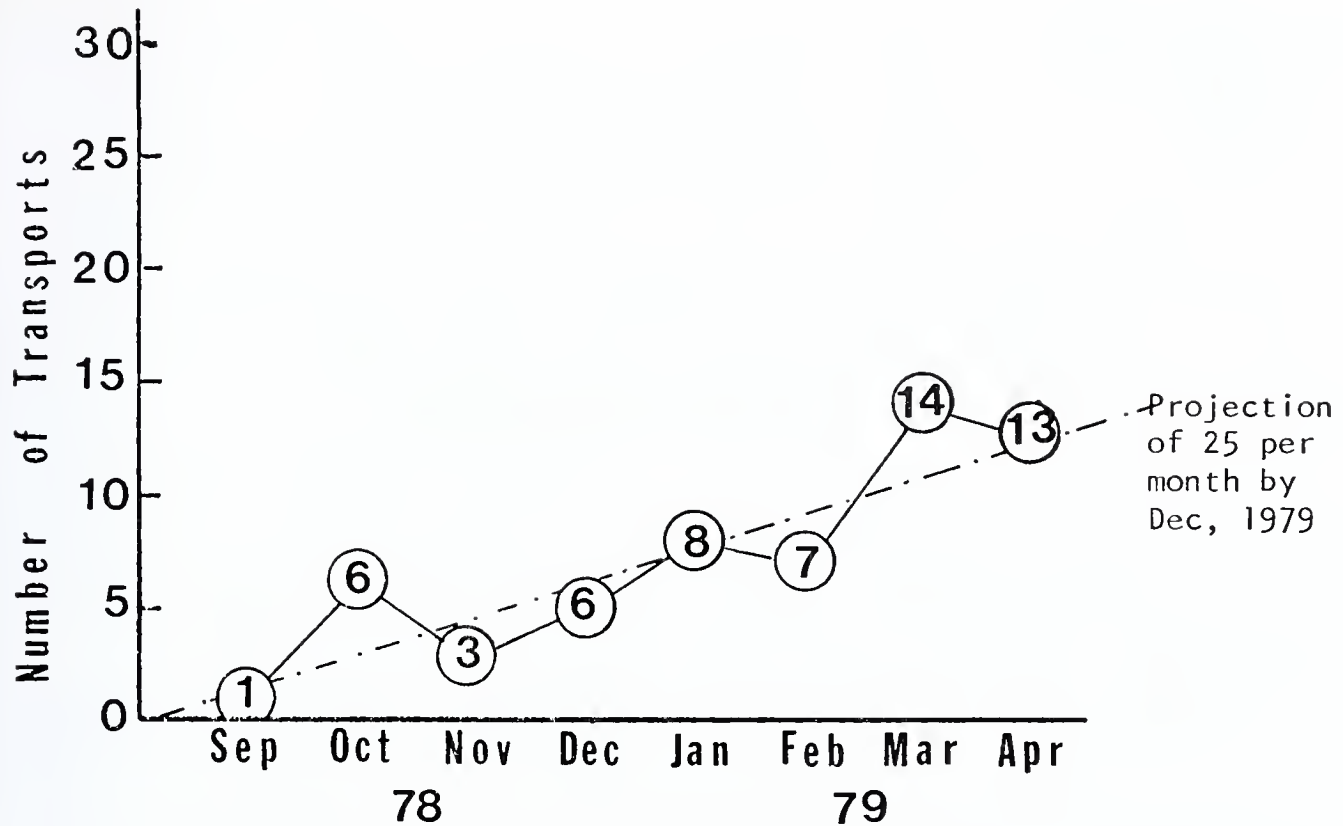


FIGURE 2.

Publicity and public relations campaigns began in February, 1979. The totals for March and April, 1979, indicate the success of this campaign.

highest level of neonatal care available to all infants in the State of Arkansas.

**Bulletin Boards**

Ron Herring, Assistant Director of Administra-

tive Support, has moved his office to 3rd floor *East*. Phone number 2554 or 2555.

Billy Hogue, Facilities Manager, has moved his office to 3rd floor *West*. Phone number 2547.







## EDITORIAL

# Oil Warfare and the Physician The Matter of Priorities

Alfred Kahn, Jr., M.D.

The practicing physician must also be a "practicing citizen." As such, he must address himself to the world around him — as well as to his profession. The United States is under attack by some of the oil producing nations: the weapon is oil, and the result is economic stagnation. The ramifications of this touch many facets of our nation, some of which are of particular interest to physicians.

The oil shortage has focused on the automobile, which is somewhat paradoxical in itself. It is reported that vehicles account for only thirty percent of the oil consumption. Although it is desirable to save oil through prudent use of the automobile, some questions inevitably rise. Why push so hard on the automobile to cut gasoline consumption without an equal pressure applied to factories to convert to coal? Automobile emission controls seriously hamper efficiency gasoline mileage; in this context, why has organized medicine not been consulted more in depth as to how much emission standards are reasonable from a health point of view — do we need emission controls as strict as those set forth by current national law to protect the citizenry? There are certainly some local trouble spots, such as Los Angeles, California, and Washington, D. C., but smog antedated the automobile in Los Angeles in any event. The lead content of bone has gone up in the past several hundred years, but is it a significant health hazard to totally outlaw tetra-ethyl lead? The important point here is that there has been a need to investigate emission fumes including carbon, nitrogen, lead, etc. Has it been done in a scientific and reasonable manner? There may be a direct answer — or there may be a matter of point of view as

to what is reasonable. Perhaps, the physician-citizen has not involved himself in this in sufficient depth.

Alternate energy sources are under close scrutiny as oil supplies diminish. Electric power supply has been generated by oil cheaper than by water power prior to 1974. Now the use of oil to produce electricity is becoming very expensive. Nuclear energy appears to be the next most available source of energy but it is currently embroiled in a great national debate. Some say that we ought to reduce our power needs and live a simpler life. This begs the question of what will happen if we do not expand our economy to try to give some of our unemployed poor good jobs; unemployment among black youth is high and they need remunerative jobs. Contract the economy and what happens to the economically less fortunate citizen? What is the danger of nuclear energy as an energy source? Forty thousand to fifty thousand people are killed by automobiles per year. Has anyone been killed from a nuclear energy plant? Nuclear energy plants do represent a potentially extremely serious health hazard in event of an explosive accident or a serious leakage of radioactivity, but so far this has not occurred. Fission plants generate nuclear wastes but in so-called breeder reactor plants the wastes can be used; the argument against this in the USA is that a by-product is plutonium which could readily be used to make nuclear bombs. Despite our self-imposed stand against breeder plants in the USA, they are being used abroad and the risk of nuclear theft of potential bomb material persists. When nuclear fusion arrives — hopefully early in the next century — atomic wastes will not be a problem, but

the nation has to make up its mind if it will tolerate nuclear energy plants of any sort.

Unless there is a scientific breakthrough, it does not appear that sunlight, wind, temperature gradients in water dams, etc., will be an adequate energy source within our fiscal reach.

Assuming we do not reach an energy equilibrium, the physician must be prepared for changes in practice and life style. Energy lack, as in gasoline, will tend to create decentralization of practice. Patients will not have gasoline for a trip to a distant center and will have to rely more on local and nearby facilities except for the most important of illnesses and surgery. The decentralization of practice could put a very heavy load on the physician in very small communities if transportation becomes really difficult. Oil warfare means that the cost of energy will rise faster than wages — meaning higher gasoline bills and higher utility bills. It also means

general inflation through trade imbalance and the resulting loss of confidence in our economy. The result will be that the public will have to set more stringent priorities on their spending. In this situation, the public will probably spend less on medical care and more on other essentials as food, clothes, shelter and fuel. Physicians may go from an economically privileged group to a lesser economic status. There is one safety valve for the physician in that more and more of the cost of medical care is being borne by insurance benefits which are relatively stable even if personal spending income falls in our so-called "stagflation."

The current climate of oil warfare raises many health and safety questions to which organized medicine should address itself. A completely right course does not seem possible, and there are many anomalies in our current approach to the problem of energy.



**MEDICINE IN THE**



## **Digoxin Antibodies**

### **A Remedy for Life Threatening Digitalis Toxicity**

**W**e now have Fab fragments of sheep digoxin-specific antibodies for the experimental treatment of advanced, life-threatening digitalis intoxication in patients available in Little Rock.

Patients receiving digoxin who develop cardiac rhythm disturbances resistant to conventional therapeutic measures, and in whom the arrhythmia appears to be potentially life-threatening, will be considered candidates for receiving digoxin-specific Fab fragments. "Life-threatening" implies unstable ectopic rhythm disturbances and/or serious hemodynamic consequences of digitalis-induced rhythm disturbances. Additional candidates for treatment would be patients admitted to the hospital with deliberate suicidal

or accidental overdosage of digitalis, in whom potentially life-threatening cardiac rhythm disturbances develop. The presence of hyperkalemia in any patient with digitalis intoxication, where the hyperkalemia cannot be accounted for by other causes, would constitute evidence of severe intoxication and would constitute a further indication for consideration of the use of digoxin-specific antibodies. All patients considered for this experimental modality will be evaluated by well-qualified cardiologists. Fab fragments would not be used unless there is a unanimous opinion that the patient's best interests are served by the administration of digoxin-specific antibody fragments.



Patients selected to receive digoxin-specific Fab fragments will be required to give informed consent for the collection of blood samples on admission and at frequent intervals during a six-week period. Twenty-four hour urine collections will be obtained for six days. After hospitalization of two weeks, the patient will be asked to return for clinic visits weekly for four weeks.

Should you have a patient who is a candidate, please contact:

Dr. James E. Doherty, M.D.  
VA Medical Center  
Little Rock, AR 72206  
Phone: 501-372-8361 Ext. 307

Other more complete information available from the above address.

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\* \* \* \*

#### THE MONTH IN WASHINGTON

Unexpected Congressional pirouetting has made the chances of some form of a national catastrophic health insurance plan a distinct possibility in the immediate future — a possibility ruled out by most lawmakers earlier in the session.

The first domino to fall was the decision of President Carter to go with a first-stage catastrophic national health insurance plan in the face of strong opposition from organized labor and Sen. Edward Kennedy (D.-Mass.) who seek a more comprehensive plan.

Then, Chairman Russell Long (D.-La.) of the Senate Finance Committee introduced a significant modification of his longstanding catastrophic measure that gives private health insurance a much larger role and eliminates the controversial payroll tax feature.

At the same time, leading Republican Senators — Robert Dole (Kan.), John Danforth (Mo.), and Pete Domenici (N. M.) — offered their own, more limited catastrophic benefit approach.

As if a house of cards were falling, though the timing was coincidental, the Kennedy-Labor forces leaked their new NHI proposal, a sharply-scaled-back plan whose first phase looks a lot like catastrophic.

Many differences separate the various plans, especially in the area of controls, but the coalescing around the broad general theme of cata-

strophic of such divergent and once-hostile factions signals a new ball game on NHI and makes Congressional passage of a NHI plan by 1980 a possibility.

The great attraction of catastrophic is the low price tag, as little as \$5 billion compared with the \$30 billion and more cost of even the most modest comprehensive approach. And, from the political standpoint, there is undeniable voter appeal in the idea of protection against the costs of severe, prolonged illness or accident.

The dominant Congressional figure on catastrophic through the years has been Sen. Long, who with a few committee cohorts such as Sens. Herman Talmadge (D.-Ga.) and Abraham Ribicoff (D.-Conn.), appeared to be waging a lonely battle against comprehensive plans backed by previous administrations and by Labor.

Everything is going Long's way this year. Carter's decision was a victory for him and a bitter pill for Kennedy. The support of Long's three Republican members on his Finance Committee for the catastrophic concept might forestall a party-line fight. The powerful lawmaker acts as if he's scenting a legislative triumph.

Long's new bill requires that employers provide catastrophic coverage. Wiped out is the provision in his previous bill — still before the Finance Committee — that would have financed this coverage through a one percent payroll tax. The change pulls federal involvement several steps back and makes the measure far more palatable to private health insurers. Small businesses would receive tax breaks for providing this coverage and the self-employed would be entitled to a tax reduction.

Benefits in Long's plan would begin after \$2,000 of physicians' bills and 60 days of hospitalization have been accrued. Long says he is considering lowering these levels.

The Dole-Danforth-Domenici bill also requires employers to offer catastrophic benefits through private health insurance with a "deductible" of \$5,000 and 60 days of hospitalization. Employees would be free to choose whether to participate. The self-employed could purchase catastrophic policies that insurers would have to provide under agreements with the government. Medicare's coverage would be extended and liberalized. States would be required to provide catastrophic Medicaid benefits.

Long congratulated Dole for introducing the

measure. He said "I hope we can agree on something that would overwhelmingly muster votes on both sides of the aisle." Replied Dole: "I believe we have, along with the distinguished Senator's proposal, the basis of some agreement that might pass the Congress and that might help the American people."

\* \* \* \*

The NHI proposal slated to be unveiled soon by the Carter Administration is expected to call for a first phase program leaning heavily on the catastrophic benefit side.

Though many other features are contained in the Administration's plan, the initial key element is catastrophic. As a result, President Carter's plan will be viewed as part of a catastrophic triumvirate of bills on Capitol Hill, joining those by Sen. Long and Sen. Dole.

Not clear yet is whether the Administration will ask Congress to approve each of the projected five phases as a separate piece of legislation, or to enact the entire plan in one package.

At any rate, the first phase would mandate that employers provide workers with catastrophic coverage insurance with a \$2,500 ceiling on out-of-pocket costs for an illness. The limit on Medicare hospital day coverage would be lifted and physicians would be required to accept assignment for Medicare patients. The federal government would pick up the tab for adding low income pregnant women and children to Medicaid where assignment also would be mandatory.

New hospital and physician cost control features are envisaged, and Health Maintenance Organizations would be encouraged.

In the next phase, a federally-established health insurance program called Healthcare would come into operation. This is designed to eventually supersede Medicare and Medicaid and to stand as a back-up health insurance plan to cover all not under private plans.

Under the plan, no federal expenditures would occur until 1983. This would provide time for Administrative planning; give initial cost controls and system reform incentives an opportunity to slow increases in health care costs prior to the expansion of coverage; and give employers an opportunity to plan for proposed standards on health insurance coverage for employees.

Physicians in all phases of the plan would be required to accept assignment for Medicare, Medicaid and Healthcare beneficiaries. A con-

solidated fee schedule would be established for all plans.

The Administration's hospital cost containment plan would be implemented in the first phase of the plan. After the completion of the last phase, alternative reimbursement plans linked to Gross National Product growth would take effect. A total expenditure limit system would be imposed.

\* \* \* \*

Sen. Edward Kennedy and his Labor allies have formally given up their long and vociferous battle for a federally-financed NHI program, bowing to the exigencies of budget-cutting and inflation.

Instead Kennedy is preparing to offer "a totally new approach" retaining private health insurance and financed largely by the private sector. The as yet unveiled plan is rumored to bristle with stringent federal controls—but is still a long way from the federally-run, federally-financed idea Kennedy launched 10 years ago.

The plan starts with the central concept first advanced by President Nixon of mandating employers to provide comprehensive health care insurance for their workers. A new and very controversial wrinkle is relating premiums to wages with the higher income people subsidizing the premium of lower income workers. Federal premium aid would be provided poor people and assistance would be given small companies financially hard hit by the mandate.

The second key idea, left over from the previous Kennedy-Labor plans, calls for a national health spending ceiling and establishment of federal and state budgeting and negotiating mechanisms for setting physicians' fees and regulating hospital costs.

There would be no cost sharing by patients and no limits on hospital or physician care.

All health insurers would be organized into four consortia which would bargain on a state or area-wide basis with health providers on prices.

Although the measure is designed to be approved as one package it could be phased in over a period of years. A likely first phase would be a catastrophic benefit.

\* \* \* \*

Hospitals reported costs in January were 14.4 percent higher than a year earlier due to general inflation, a higher birth rate and more surgery.



Paul Earle, Director of the Voluntary Effort, said double-digit inflation was making a difficult for hospitals to meet their voluntary goal of holding cost increases to 11.6 percent this year.

"Approximately two-thirds of the increase in expenses was a result of tremendous increases in general inflation, especially the cost of food and fuel," Earle said in a statement. In addition, he said, "The increase in births and surgical procedures was the greatest of any January increase in 16 years."

John Alexander McMahon, President of the American Hospital Association, told the House Commerce Health Subcommittee the Administration's hospital cost containment bill "would create a dilemma for hospitals because it would limit hospital spending while ignoring the causes of increasing costs."

Earle called the January figure "an interruption" in the general slowing of hospital expenses.

"Clearly hospitals are doing a good job controlling the expenditures they can," he said, "but they can't control the cost of food and fuel nor the number of people who get sick or the number of births."

Meanwhile, the AMA warned Congress that the consequences of error in the Administration's hospital cost containment policy "will be far greater than higher prices at the gas pump or the department store."

"We are gambling with a medical care system that is unsurpassed in the world," declared Robert Hunter, M.D., Chairman of the AMA's Board of Trustees. "The price of failure will be paid in terms of the health and welfare of all Americans."

Dr. Hunter told the House Commerce Subcommittee on Health that hospitals have been selected as a target. The Administration policy is difficult to understand because the hospital industry, "having voluntarily and effectively responded to the President's call for restraint, is now being singled out for rigid, discriminatory and complex mandatory controls," said Dr. Hunter. "The equities and economics of the situation certainly don't make sense."

He said that "the Administration is trying to deal with a problem, caused by government, with more government. We submit that the better response to hospital cost containment problems can be provided by the voluntary efforts of the private sector."

William Felch, M.D., Chairman of AMA's Council on Legislation, said "We do not believe the place to scrimp is in the area of health care."

Dr. Felch urged the lawmakers to reject the Administration bill "and thus give assurance to the total private sector of government's genuine commitment to truly voluntary controls as called for by the Administration. To do otherwise would constitute a declaration by the Committee that the Administration's commitment to a voluntary program for the nation is a sham."

He also said Congress should scrutinize the entire regulatory process "which has added tens of billions of dollars to the cost of medical care." Regulatory costs alone, under the present circumstances, may lead to the rationing of health care."

\* \* \* \*

The AMA has urged Congress to reject extension of certificate-of-need requirements to equipment purchased for physicians' offices and to eliminate the "unfair advantages" for Health Maintenance Organizations contained in health planning legislation.

In a statement submitted to the House Commerce Subcommittee on Health, the AMA criticized a proposal to require approval of purchases by physicians of equipment determined to be used for inpatient care in hospitals. The language in the bill "is such that any single use of the equipment for inpatients could subject it to the CON requirement," the AMA noted.

The states should be allowed to decide whether or not to carry out certificate-of-need programs rather than be forced into them by the federal government, the AMA said.

The special criteria state agencies must follow in evaluating Health Maintenance Organizations creates artificial standards that "could be very disruptive of comprehensive health planning as it ties the hands of local agencies by allowing them to plan for only part of the health sector in their community."

In addition, the provision permits opportunities for unlimited expansion of HMO's while other forms of delivery are restricted through CON review, the AMA said.

This is "inimical to freedom of medical choice and very destructive of a pluralistic health care delivery system."

The present planning law places insufficient authority at the local level and is too flexible,

the AMA said. Unless major changes are made, the law should be repealed, the AMA declared.

\* \* \* \*

President Carter has sent Congress a Privacy of Medical Information bill limiting federal access to medical records and allowing individuals the right to check their records.

The measure also makes it a crime to obtain medical record information under false pretenses and sets up other privacy safeguards for information obtained by hospitals and other facilities.

The Administration bill provides that if direct access to records may harm the patient, access may be provided through an intermediary. Carter said that "this legislation allows the individual to ensure that the information maintained as part of his medical care relationship is accurate, timely and relevant to that care. Such accuracy is of increasing importance because medical information is used to affect employment and collection of insurance and other social benefits."

The bill allows disclosure when it is needed for medical care and other legitimate purposes, such as verifying insurance claims, and for research and epidemiological studies. In such cases, redisclosure is restricted.

The House Subcommittee on Government Information and Individual Rights has been holding hearings on medical records, chaired by Rep. Richardson Preyer (D.-N.Y.), including the long-awaited Administration privacy package released by President Carter.

Alfred Freedman, M.D., President of the National Commission on Confidentiality of Health Records, told the Subcommittee there is a particularly urgent need for health privacy legislation at this time, because a "revolution in record-keeping has vastly increased the availability of private medical information to insurance companies, government agencies, employers, and research data banks."

However, Dr. Freedman said the proposed legislation may not set strict enough limits on law enforcement access to medical records.

Dr. Freedman said the Commission on Confidentiality seeks a fair balance between the patient's right to privacy and society's legitimate needs for personal health information, but added that "we have been distressed in recent years at the continuing erosion of practitioner-patient confidentiality."

\* \* \* \*

Medical residents have won a crucial court decision in their fight to organize formally and engage in collective bargaining with hospitals.

The upshot of a 2-1 decision by the U. S. Court of Appeals in Washington, D. C., was to give the residents the right under federal law to form labor unions. However, the National Labor Relations Board (NLRB) may appeal the decision to the Supreme Court.

The Appellate Court reversed a decision by a U. S. District Court judge in Washington that he lacked jurisdiction to hear the residents' appeal from an NLRB decision in 1976 that residents were not covered by a 1974 law permitting private non-profit hospitals to organize under the NLRB Act.

Since the District Court could have accepted jurisdiction only on a finding of serious error in interpreting the law by the NLRA, the effect of the Appeals Court decisions was to uphold the residents' case.

The Physicians National House Staff Association, the national representative of the residents, has more than 13,000 members. More than 30,000 residents would be affected by the decision. The Association of American Medical Colleges brought suit before the NLRB to deny the residents collective bargaining powers under the NLRB Act.

\* \* \* \*

Donald Kennedy, head of the Food and Drug Administration since April 1977, has unexpectedly resigned his post in order to return to Stanford University as Provost and Vice President for Academic Affairs.

Kennedy, 47, was the first non-physician FDA Commissioner in more than a decade. His resignation leaves several key issues unsettled, including the fate of the Drug Regulation Reform Act, a ban on saccharin, and a proposal for a complete overhaul of the nation's food safety laws.

In accepting Kennedy's resignation, HEW Secretary Califano expressed his "great regret," adding that Kennedy had given "a remarkable demonstration of the effect that an individual with great talent and commitment can have on an organization."

Commissioner Kennedy was generally recognized as one of the stronger personalities within HEW, establishing himself as an articulate and vigorous advocate for his agency even when his positions conflicted with Califano's office.



# keeping up

## Category 1 Continuing Medical Education Programs Available in Arkansas

### SPORTS MEDICINE SEMINAR

Presented by Dr. C. L. Nelson, Chairman, Department of Orthopaedic Surgery, University of Arkansas for Medical Sciences, 8:30 a.m. to 5:00 p.m., August 3, 1979, Education II Amphitheater, and 8:00 a.m. to 11:30 a.m., August 4, 1979, Bioskills Laboratory, University of Arkansas for Medical Sciences. Seven hours Category I credit August 3 and 3½ hours August 4. Fee undetermined at this time.

### TWO DAYS OF INTERNAL MEDICINE

Presented by Dr. George L. Ackerman, September 7 and 8, 1979, Arkansas State Mental Health Services Auditorium, 4313 West Markham, Little Rock. Fifteen hours Category I credit. Fee approximately \$100.

### ADOLESCENT MEDICINE AND ENDOCRINOLOGY

September 14, 1979, 8:00 a.m. to 4:30 p.m., Room E-155, Education Wing, St. Vincent Infirmary. Seven hours Category I credit. Registration fee \$25.

### ANESTHESIOLOGY CONTINUING EDUCATION PROGRAM

"Anesthesia for Out-patient Surgery," presented by Dr. Robert Gibbons; "Anesthesia for

Carotid Endarterectomy" by Dr. C. Phillip Larson, and "Cardiac Function and Arrhythmias Related to Anesthesia" by Dr. Mark C. Rogers, September 15, 1979, 8:00 a.m. to 3:00 p.m., Little Rock Hilton Inn. Six hours Category I credit. Registration fee \$40.

### COLON AND RECTAL CANCER

Presented by Dr. W. Ducote Haynes, 9:00 a.m. to 12:00 noon, September 22, 1979, Education II Building, 131A-B, University of Arkansas for Medical Sciences, Little Rock. Three hours Category I credit. No fee.

### THE AGING LUNG

Presented by Drs. Richard V. Ebert, Joseph H. Bates and Roger Bone, 9:00 a.m. to 5:00 p.m. September 24, 1979, and 9:00 a.m. to 12:00 noon, September 25, 1979, Arkansas State Mental Health Services Auditorium, 4313 West Markham, Little Rock. Ten hours Category I credit. Fee not established at this time.

### 1979 SPRING MEETING OF THE ARKANSAS OPHTHALMOLOGICAL SOCIETY

September 28 and 29, 1979, Red Apple Inn, Heber Springs, Arkansas. Program presented by Drs. Howard L. Beale and John P. Shock. Seven hours Category I credit. Fee approximately \$50.

### RECURRING EDUCATION PROGRAMS

Unless otherwise indicated, programs are for one to one and one-half hours Category I credit.

*INTERHOSPITAL GI PROBLEMS CONFERENCE*, First Monday of each month, 6:00 p.m., St. Vincent Infirmary, Little Rock.

*PEDIATRIC CONFERENCE*, First and Third Monday of each month, 12:30 p.m. to 1:30 p.m., St. Vincent Infirmary, Little Rock.

*PERIPHERAL VASCULAR DISEASE CONFERENCE*, Second Monday of each month, 6:00 p.m., St. Vincent Infirmary, Little Rock.

*PULMONARY CARE CONFERENCE*, Tuesday of each week, Noon until 1:00 p.m., Dining Room #4, Baptist Medical Center, Little Rock.

*INTERHOSPITAL UROLOGY GRAND ROUNDS*, First Tuesday of each month, 5:30 p.m., St. Vincent Infirmary, Little Rock.

*INTERESTING CASES*, Second and Fourth Tuesday, 11:50 a.m., St. Bernard's Regional Medical Center, Jonesboro.

*CENTRAL ARKANSAS PRIMARY CARE CONFERENCE*, Second Tuesday of each month, 7:00 p.m. to 9:00 p.m., Baptist Medical Center Auditorium, Little Rock. Two hours Category I credit or two hours AAFP prescribed credit.

*TUMOR CONFERENCE*, Third Tuesday, 11:50 a.m., St. Bernard's Medical Center, Jonesboro.

As organizations accredited for continuing medical education by the Liaison Committee on Continuing Medical Education, the organizations named certify that these continuing medical education activities meet the criteria for the credit hours specified in Category I of the Physician's Recognition Award of the American Medical Association.

*NEUROPATHOLOGY CONFERENCE*, Third Tuesday of each month, 5:00 p.m., St. Vincent Infirmary, Little Rock.

*TUMOR CONFERENCE*, First Wednesday each month, 7:00 a.m., St. Michael Hospital, Texarkana.

*INTERNAL MEDICINE CONFERENCE*, Second and Fourth Wednesday of each month, 7:00 a.m., Second Wednesday, Wadley Hospital; Fourth Wednesday, St. Michael Hospital, Texarkana.

*MORBIDITY AND MORTALITY CONFERENCE*, First Thursday of each month, 8:00 a.m. to 9:00 a.m., Conference Room #1, Baptist Medical Center, Little Rock.

*SURGERY CONFERENCE*, Second, Third, and Fourth Thursday of each month, 8:00 a.m. to 9:00 a.m., Conference Room #1, Baptist Medical Center, Little Rock.

*PULMONARY CONFERENCE*, First and Third Thursday of each month, 12:00 noon, St. Vincent Infirmary, Little Rock.

*MEDICAL LECTURE SERIES*, First, Second, and Fourth Friday of each month, 11:50 a.m., St. Bernard's Regional Medical Center, Jonesboro.

*CHEST CONFERENCE*, Third Friday, 11:50 a.m., St. Bernard's Regional Medical Center, Jonesboro.

*CARDIOPULMONARY RESUSCITATION COURSE*, August 15, 1979, and September 12, 1979, 6:00 p.m. to 12:00 p.m., Human Resource Development Area, Baptist Medical Center, Little Rock. Six hours Category I credit or six hours AAFP prescribed credit.

*MONTHLY MEDICAL LECTURE*, 7:30 p.m., August 21, 1979, Walnut Ridge; September 18, 1979, Pocahontas.

*CLEFT PALATE CONFERENCE*, September 19, 1979, and November 21, 1979, 12:30 p.m., St. Vincent Infirmary, Little Rock.



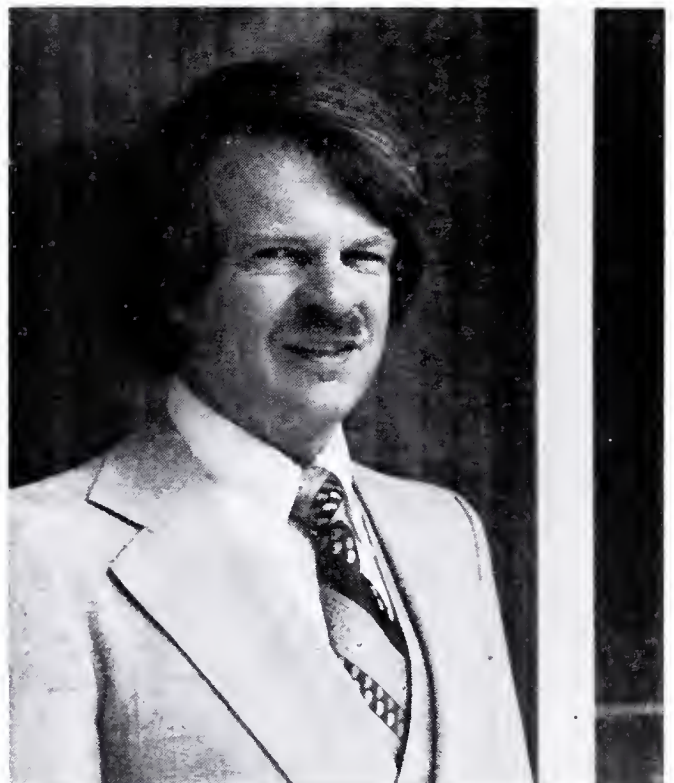
## New Councilors of the Arkansas Medical Society



JOHN M. HESTIR  
DeWitt  
Councilor, Third District

### John M. Hestir

Dr. Hestir was born in Des Arc and attended Little Rock Public Schools. His pre-medical education was at Little Rock Junior College and the University of Arkansas. He received a Bachelor of Science degree from the University in 1950. He was graduated from the University



R. JERRY MANN  
Arkadelphia  
Councilor, Seventh District

of Arkansas School of Medicine in 1955. His internship was at the University of Texas Medical Branch, Galveston.

Dr. Hestir has been in family practice at DeWitt since 1956. He is a member of the American Academy of Family Physicians and he is a past president of the Arkansas Caduceus Club.



He has served as vice president of the Arkansas Medical Society and as county society delegate to the State Society House of Delegates and on several committees of the State Society. He is married to Billie Rochell Hestir and they have three sons — R. S. Hestir, D.D.S., of DeWitt; Ronald W. Hestir, an architect in Little Rock, and John Russell Hestir, who attends the University of Arkansas and is engaged in farming.

Dr. Hestir's hobbies are hunting and fishing.

#### **R. Jerry Mann**

Dr. Mann was born in El Dorado and attended public schools there. He received a B.A. degree from Hendrix College in 1962 and did graduate work in Zoology at the University of Arkansas. In 1967, he received his M.D. degree from the University of Arkansas School of Medicine. Dr. Mann served a rotating internship at Portsmouth Naval Hospital and a Family Practice Residency at Jacksonville Naval Hospital in Florida. He remained on duty with the Navy Medical Corps until 1973 as a Lieutenant Commander with service in Taipei, Taiwan, and at Millington Naval Air Station in Memphis.

Dr. Mann is a Diplomate of the American Board of Family Practice. He has been in Family

Practice at Arkadelphia since 1973 and is associated with Dr. John W. Balay.

Dr. Mann is an active member of the medical staff of Clark County Memorial Hospital, having served as Chief of Surgery and Chief of Staff in 1978. He is a Trustee of the Governing Board of the Hospital.

Dr. Mann has represented his county medical society as delegate to the State Society since 1974. His memberships include the American Academy of Family Physicians, Southern Medical Association, and the Christian Medical Society. He is on the Board of Directors of the Arkansas Academy of Family Physicians and the Arkansas Medical Political Action Committee.

He is also a member of the Clark County Health Advisory Committee, a member of the Board of Directors of the Arkadelphia Chapter of Rotary International, and a member of the Arkadelphia Chamber of Commerce.

Dr. Mann is a member of the First United Methodist Church of Arkadelphia and a member of the Administrative Board of the Church.

Dr. Mann has three children — Ralph Stone Mann, born in 1965; Paul David Mann, born in 1967; and Mary Elizabeth Mann, born in 1968.



## **P E R S O N A L   A N D   N E W S   I T E M S**

#### **PHYSICIAN RECEIVES AWARD**

Dr. Ben Saltzman of Little Rock recently received the Will Ross Medal of the American Lung Association at the annual meeting in Las Vegas. The award recognizes unique accomplishments in public health and/or community action aspects of lung disease control and is one of the Association's two highest honors.

#### **DOCTOR NAMED**

The American Rural Health Association has named Dr. Thomas A. Bruce, dean of the College of Medicine at the University of Arkansas for Medical Sciences, to its National Cabinet.

#### **PHYSICIAN ADDRESSES CLUB**

Dr. James Moffat of Jonesboro recently ad-

dressed the University Heights Lions Club on the subject of Obesity.

#### **DOCTOR REPORTS**

At the recent meeting of the American Association for Thoracic Surgery in Boston, Dr. G. Doyne Williams of Little Rock gave a report on the technique of using deep hypothermia with circulatory arrest to perform complex repairs on the genetically defective hearts of infants.

#### **DOCTOR ATTENDS MEETINGS**

Dr. George Warren of Smackover recently attended a meeting of the National Legislation and Governmental Affairs Commission of the American Academy of Family Practice in Greenbriar, West Virginia. He also attended a recep-

tion in Washington, D.C., hosted by the American Academy of Family Practice for members of Congress.

#### **PHYSICIAN SPEAKS**

Dr. John G. Tedford of Little Rock addressed the Little Rock Ostomy Chapter recently. The subject of his presentation was "Ileostomies and Colostomies: Types, Function and History of Development."

#### **DOCTOR APPOINTED**

Dr. H. Scott McMahan of Magnolia has been appointed to serve on the Magnolia School Board.

#### **DIPLOMATES NAMED**

The American Board of Family Practice has recently certified four Jonesboro physicians. They are: Dr. Robert O. Lawrence, Dr. Grover D. Poole, Dr. Bascom P. Raney and Dr. Joe H. Stallings, Jr.

#### **PHYSICIAN RECOGNIZED**

Dr. L. D. Massey of Osceola was recently given special recognition as an emeritus member of the Memphis Academy of Internal Medicine.

#### **DR. THOMAS HONORED**

A public reception was held on May 27th to honor Dr. and Mrs. H. W. Thomas of Dermott. Approximately four hundred people from south-east Arkansas attended the reception.

The reception was hosted by a group of twenty physicians who had served as preceptors under Dr. Thomas, or had been befriended by him, and it was in recognition of the fortieth anniversary of his graduation from medical school. Dr. Lee B. Parker, Jr., of Fayetteville served as chairman for the event. He and the other physicians wanted to show their appreciation and gratitude

to Dr. Thomas for his dedicated and compassionate service as a physician and outstanding leader for the past forty years. Other hosts were George Ackerman, Brian E. Barlow, Bill Bynum, Russell Cobb, Daniel Christmas, David Daniel, J. Lee Dockery, Robert Kerr, Donald Loveless, Doug Lowrey, Frank Morgan, Kenneth New, Orval Riggs, Louis Sanders, Harold Short, James Suen, Al Thomas, Sloan Wilson, and Barney Wisinger.

Dr. Thomas received plaques of appreciation from the reception hosts, from Joyce Kenney who had just completed a preceptorship with Dr. Thomas, and from the City of Dermott.

#### **DOCTOR DISCUSSES ABORTION**

Dr. Orman Simmons, a Little Rock obstetrician, recently addressed the members of Birthright of Greater Little Rock at their annual meeting. The subject of his speech was "Abortion — A Physician's Perspective." Dr. Simmons and his colleagues — Dr. James Kwee, Dr. Douglas B. Smith, and Dr. James Studdard — received an award from the organization for their pro-life position and their assistance to its members.

#### **PHYSICIAN RECEIVES RECOGNITION**

Dr. G. Allen Robinson of Harrison recently received the President's Commendation Award during North Arkansas Community College's commencement ceremonies. Dr. Robinson was honored for his work with the Library Committee and his interest in the Ozark Heritage Center at the College.

Dr. Robinson attended his sixtieth reunion at Vanderbilt University School of Medicine in Nashville in May.





THINGS



TO

COME

The Department of Orthopaedic Surgery, University of Arkansas for Medical Sciences, will sponsor a course on Sports Medicine on August 3 and 4, 1979. The first day will be directed for the Family Physician and the second day will be directed to the Orthopaedic Surgeon with a special focus on arthroscopy. The Visiting Professors will be John McGinty, M.D., of Boston, MA and Robert E. Eilert, M.D., of Denver, CO.

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#### FAMILY PHYSICIANS TO HOLD SESSION

The thirty-second annual Scientific Session of the Arkansas Academy of Family Physicians will be held August 2-4, 1979, at the Little Rock Convention Center and Camelot Inn. The session has been approved for eighteen prescribed credit hours. The program is as follows:

THURSDAY, AUGUST 2, 1979

12 Noon — Board of Directors' Luncheon Meeting, Camelot Inn

FRIDAY, AUGUST 3, 1979

8:00-9:15 a.m. — "Current Concepts in Asthma Management," Roger Bone, M.D., University of Arkansas for Medical Sciences, Little Rock

10:00-Noon — "HDL Cholesterol and Other Lipids in the Risk of Coronary Heart Disease," William P. Castelli, M.D., Medical Director, Framingham Heart Studies, Framingham, Massachusetts

12:15-1:30 p.m. — Business Luncheon/Guest Entertainer: Mr. Jack Taylor, Mayor of Whoop-Up, Missouri

1:30-3:15 p.m. — Mr. Robert C. Bohlman, Medical Group Management Consultant, Arling-

ton, Texas, "Coping With the Present/Planning For the Future."

3:30-5:00 p.m. — "Technical Factors in Plastic Surgery Repair and Tips in Diagnosis of Possible Underlying Injury," Thomas D. Gant, M.D., San Francisco General Hospital, San Francisco, California

SATURDAY, AUGUST 4, 1979

7:00-8:00 a.m. — Razorback Breakfast. Guest speaker, Mr. Pat Foster

8:15-9:15 a.m. — "Colposcopy and Cryosurgery in the Management of Abnormal Cervical Cytology," A. D. DePetrillo, M.D., McMaster University, Hamilton, Ontario, Canada

10:00-12:00 Noon — "Medicine and Marriage" — Part I: "Patients in the Practitioner's Office," Gordon H. Deckert, M.D., University of Oklahoma Health Science Center, Oklahoma City, Oklahoma

Noon-1:30 p.m. — Installation of Officers — Luncheon

2:00-4:00 p.m. — "Medicine and Marriage" — Part II: "Patience in the Practitioner's Family," Gordon Deckert, M.D.

Registration fee is \$35.00 for members, \$45.00 for non-members, and \$5.00 for residents. Medical students may attend without charge. Physicians in all specialties are invited. For further information contact Mrs. Alta Good, Executive Secretary, Arkansas Academy of Family Physicians, Post Office Box 5721, Little Rock, Arkansas 72215; Phone (501) 227-4633.

#### PEDIATRICS POST-GRADUATE COURSE

The Scottish Rite Hospital for Crippled Children will have its second annual post-graduate course entitled "Pediatrics in Review — 1980 — The School Age Child," January 13-19, 1980, in Acapulco, Mexico. For further information contact: Judson Hawk, Jr., M.D., Scottish Rite Hospital for Crippled Children, 1001 Johnson Ferry Road, Atlanta, Georgia 30342; Phone (404) 256-5252.





## NEW MEMBERS

### **DR. VERN ANN SHOTTS**

The Greene-Clay County Medical Society has added Dr. Vern Ann Shotts to its membership roll. Dr. Shotts was born in Paragould. She was graduated in 1971 from the University of Arkansas with a Bachelor of Science degree. Dr. Shotts received her medical degree from the University of Arkansas College of Medicine in 1975. She completed her internship and residency training in pediatrics at the University of Arkansas Hospital. She is a member of the American Academy of Pediatrics.

Dr. Shotts is in the practice of pediatrics at 1015 West Kingshighway, Paragould.

### **DR. GARY B. COLE**

Dr. Gary B. Cole is a new member of the Craighead-Poinsett County Medical Society. He is a native of Jonesboro. Dr. Cole was graduated from Arkansas State University in 1965 with a Bachelor of Science degree. In 1972, he received his medical degree from the University of Arkansas School of Medicine. Following graduation, Dr. Cole served in the United States Army and received his internship training at Fitzsimons Army Medical Center in Denver, Colorado. He practiced seven years in the Army while stationed at Fort Stewart, Georgia; Fort Knox, Kentucky; Ford Ord, California; and Fort Sam Houston, Texas.

Dr. Cole is a member of the American College of Emergency Medicine. He is in the practice of General and Emergency Care Medicine at Craighead Memorial Hospital, Jonesboro.

### **DR. JOHN M. HILL, JR.**

The Independence County Medical Society has added Dr. John M. Hill, Jr., to its membership roll. His hometown is Memphis, Tennessee. Dr. Hill attended the University of Oklahoma, graduating in 1954. He then received his M.D. degree in 1958 from the University of Oklahoma School

of Medicine. Dr. Hill interned and completed residencies in pediatrics and pathology at Hillcrest Medical Center in Tulsa, Oklahoma. He served in the military from 1961-63 at Fort Sill, Oklahoma.

Dr. Hill practiced in Tulsa for 15 years, eleven years in pediatrics and four years in pathology. He then practiced pathology in Memphis for two years before locating in Batesville. Positions held by Dr. Hill include Director of Medical Education and Coordinator of Pediatric Education at Hillcrest Medical Center, Tulsa, and Assistant Professor at the Southern School of Optometry from 1976-77.

Dr. Hill is a member of the College of American Pathologists, American Society of Clinical Pathologists, and the American Academy of Pediatrics.

Dr. Hill is a board certified Pathologist practicing at the White River Medical Center in Batesville.

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Four new members have been added to the roll of the Miller County Medical Society:

### **DR. G. H. DRUFF**

Dr. G. H. Druff is a native of Amsterdam, Netherlands. He received a B.A. degree in 1969 from Memphis State University. Dr. Druff attended the University of Tennessee College of Medicine in Memphis, receiving his medical degree in 1972. He interned at City of Memphis Hospital. Dr. Druff completed a residency in obstetrics and gynecology at the University of Tennessee Center for Health Sciences in 1976.

Dr. Druff is Assistant Clinical Professor of Obstetrics and Gynecology at the University of Arkansas. He is board certified in Obstetrics and Gynecology and a member of the American College of Obstetrics and Gynecology.

Dr. Druff is in the practice of General Medicine and Obstetrics and Gynecology at 300 East Sixth Street, Texarkana.

### **DR. BENJAMIN A. McWILLIAMS**

Dr. Benjamin A. McWilliams was born in Terrell, Texas. He attended the University of Texas at Arlington for his pre-medical education, receiving a B.A. degree in 1970. Dr. McWilliams received his medical degree in 1974 from the University of Texas Medical Branch, Galveston. He interned and completed a residency in Obstetrics and Gynecology at John Peter Smith Hospital, Fort Worth.



## NEW MEMBERS

Dr. McWilliams is a Junior Fellow of the American College of Obstetrics-Gynecology. His practice is located at 300 East Sixth Street, Texarkana.

### **DR. WILLIAM C. TOMPKINS, JR.**

Dr. William C. Tompkins, Jr., is a native of Greenville, Mississippi. He was graduated from the University of Mississippi in 1963 with a Bachelor of Science degree. Dr. Tompkins then attended the University of Mississippi School of Medicine in Jackson, receiving his M.D. degree in 1968. He received his internship and residency training at the University Hospital in Jackson.

Dr. Tompkins has been in practice in Texarkana for five years. He is certified by the American Board of Surgery. Dr. Tompkins is a member of the Southern Association for Vascular Surgery, the International Cardiovascular Society, and the Southwestern Surgical Congress.

Dr. Tompkins is in the practice of General Surgery and Vascular Surgery at 300 East Sixth Street, Texarkana.

### **DR. FRED A. HUTCHESON, JR.**

Dr. Fred A. Hutcheson, Jr., was born in Magnolia. After attending Southern State College in Magnolia, he entered the University of Arkansas School of Medicine and received his medical degree in 1969. Dr. Hutcheson interned and completed an Internal Medicine residency at University Hospital in Little Rock and the Little Rock Veterans Administration Hospital. He served in the United States Air Force Reserve 1970-75.

Dr. Hutcheson is Assistant Clinical Professor of Internal Medicine at the University of Arkansas School of Medicine. He is a member of the American College of Physicians.

Dr. Hutcheson is board certified in Internal

Medicine, practicing at the Southern Clinic, 300 East Sixth Street, Texarkana.

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### **DR. HARRY J. JORDAN**

The Craighead-Poinsett County Medical Society has added Dr. Harry J. Jordan to its membership roll. He is a native of Monticello. Dr. Jordan was graduated from Arkansas State University in 1969. He then received his medical degree from the University of Arkansas School of Medicine in 1973. Dr. Jordan interned and completed an Internal Medicine residency at the University of Arkansas. He also completed a fellowship in Gastroenterology at the University of Arkansas in 1978.

Dr. Jordan is Assistant Professor of Medicine at the University of Arkansas College of Medicine. He is certified by the American Board of Internal Medicine and a member of the Arkansas-Oklahoma Endoscopic Society.

Dr. Jordan is a Gastroenterologist at 311 East Matthews, Jonesboro.

### **PULASKI COUNTY**

A new courtesy member of the Pulaski County Medical Society is Dr. Thomas J. Cornell, a Radiology resident.



#### **ANSWER—Electrocardiogram of the Month**

**DISCUSSION:** The second complex in Lead I has a normal PR interval while the third complex has a short PR interval and what appears to be a delta-wave. Other complexes in other leads also suggest W-P-W syndrome. Some complexes such as the first complex in Lead I and the first and third complexes in Lead V<sub>1</sub> are very wide, have no easily seen P-wave, and are slightly premature, suggesting ectopic ventricular beats or fusion beats. No compensatory pauses are present, however. Thus, the best response would be D.





## OBITUARY

### DR. JOHN HENRY McCURRY

Dr. John Henry McCurry of St. Louis, formerly of Cash, died May 4, 1979, at the age of 106.

Dr. McCurry was born in Memphis on November 16, 1872. He was graduated from the old Memphis Hospital Medical School in 1897, which later became the University of Tennessee Medical School. Dr. McCurry then moved to Credit, which was the beginning of a seventy-year medical career in Arkansas. He later moved to Grubbs and finally to Cash, where he practiced forty-three years before retiring in 1967.

Before purchasing his first automobile in 1914, Dr. McCurry called on many patients by horseback, becoming known as the "saddle bag doctor." He estimated that he had delivered over 2,000 babies.

After twenty-six years of service as secretary of the Craighead-Poinsett County Medical Society, Dr. McCurry was elected secretary emeritus of the society. He also served for about thirty years as secretary of the First Councilor District Medical Society. He was named outstanding practitioner by the Craighead-Poinsett County Medical Society in 1952 and received a "Certificate of Merit" from the University of Tennessee Medical School that same year.

Dr. McCurry was instrumental in organizing

both the Fifty Year Club of the Arkansas Medical Society and the Fifty Year Club of American Medicine. He served as secretary of both clubs for many years.

Dr. McCurry was honored by the Arkansas Medical Society in 1966 for his effort on behalf of the Fifty Year Club, his work as secretary of the local and district medical society, and his unselfish and inspiring devotion to the profession during his seventy years of practice. Dr. McCurry was a life member of the Arkansas Medical Society.

Survivors include three daughters.

### DR. MILLARD W. BLACK

Dr. Millard W. Black of Little Rock died May 28, 1979. He specialized in Family Practice and Geriatrics.

Dr. Black was born in Jersey City, New Jersey, on July 27, 1913. He was graduated from the University of Arkansas School of Medicine in 1938. He interned at North Hudson Hospital in Jersey City and Missouri-Pacific Hospital in Little Rock. He began practicing in Arkansas in 1945. During World War II, Dr. Black served with the Army Medical Corps in Italy and North Africa.

Dr. Black was on the Board of Directors of the Union Rescue Mission, where he volunteered as medical consultant. He also served as advisor to the Arkansas State Medical Assistants Society and was selected "Boss of the Year" by the Pulaski County Chapter in 1965. He was a member of the Westover Hills Presbyterian Church and the Pulaski Heights Masonic Lodge.

Dr. Black is survived by his wife, Mrs. Ruth Lieblong Black, one son and two daughters.

## RESOLUTIONS



### DR. ELMER J. RITCHIE

WHEREAS, the members of the Pulaski County Medical Society are deeply saddened by the recent death of a valued member, Elmer J. Ritchie, M.D.; and

WHEREAS, for the past thirty-nine years as a member of this organization he has been held in high esteem by his colleagues and others in the medical professions; and

WHEREAS, his devotion to the betterment of the health of his countless patients was rewarded by their reverence of him,

BE IT THEREFORE RESOLVED: THAT, we adopt this resolution as a token of our appreciation of his selfless administrations in the pursuit of his profession and as an expression of our sympathy to his family; and

THAT, a copy of this resolution be made a part of the permanent records of this Society; and

THAT, a copy be forwarded to the Journal of the Arkansas Medical Society for publication.

By Direction of the Memorials Committee

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Pulaski County Medical Society



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**Usage in Pregnancy:** Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

**Precautions:** If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed; drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

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SCIENTIFIC ARTICLES

Renal Transplantation: An Update .....	125
<i>R. E. Casali, M.D., S. Rastogi, M.D., G. Barbour, M.D., K. Westbrook, M.D., and R. Patterson, M.D.</i>	
The Stroke Problem .....	130
<i>Ray Jouett, M.D.</i>	
Medical Grand Rounds: "Acute Aortic Insufficiency" .....	137
<i>James A. Scovil, M.D., A. J. Thompson, M.D., Joe K. Bissett, M.D., Marvin L. Murphy, M.D., and James E. Doherty, M.D.</i>	

FEATURES

ECG of the Month .....	141
<i>John Watson, M.D.</i>	
Office Orthopaedics: "Chondromalacia Patellae" .....	142
<i>Philip H. Johnson, M.D.</i>	
Editorial: "Myasthenia Gravis and Immunity" .....	148
<i>Alfred Kahn, Jr., M.D.</i>	
Medicine in the News .....	149
Keeping Up .....	153
Personal and News Items .....	154
Things to Come .....	155
New Members .....	156
Obituary .....	158

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## Renal Transplantation: An Update

R. E. Casali, M.D., S. Rastogi, M.D., G. Barbour, M.D., K. Westbrook, M.D., R. Patterson, M.D.,\*

1979 marks the silver anniversary of the first kidney transplant which was performed in Boston in 1954.<sup>14</sup> That original patient is still alive and well thanks to a kidney donated by his identical twin. Since 1954, renal transplantation has emerged as an accepted and effective form of treatment for end stage renal disease. In 1976, an estimated 4,200 kidney transplants were performed in the United States. A total of 30,000 kidney transplants have now been performed worldwide. Both graft and patient survival have improved as kidney transplantation developed. With these accomplishments, indications for transplantation have widened to include children and patients with diabetes or other complicating illnesses. These developments, with the expanding pool of patients (approximately 37,000) that are currently receiving chronic dialy-

sis,<sup>26</sup> will further increase the number of transplants performed each year.

In April of 1975 the Little Rock VA Hospital began its transplant program. The purpose of this report is to review our experience and the current concepts of renal transplantation.

### MATERIALS & METHODS

From April 1975 to December 1978, thirty patients received kidney transplants. The mean patient age was 43 years. Twenty patients received grafts from living relatives and ten from cadavers. Tissue compatibility (HLA) is listed in Table One.

Prior to transplantation, all patients either underwent splenectomy or splenectomy and bilateral nephrectomy. The latter was performed in patients with infected kidneys, polycystic kidneys, or hypertension.

Standard transplantation techniques were used,

### ALL TRANSPLANTS

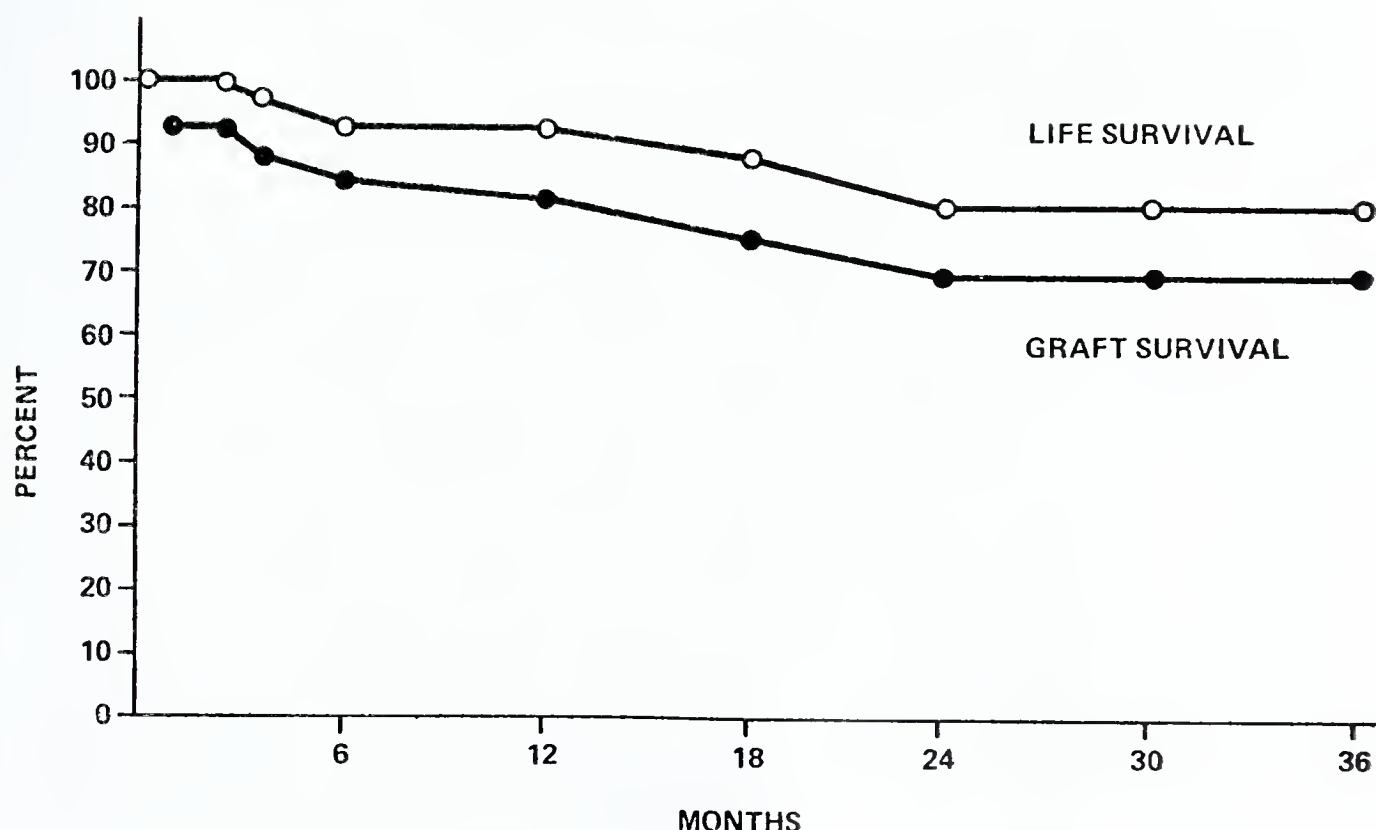


Figure 1.

\*University of Arkansas for Medical Sciences, 4301 West Markham, Little Rock, Arkansas 72201.



in that the kidney was placed preferentially in the right iliac fossa. The arterial anastomosis was performed end-to-end utilizing the hypogastric artery and the vein end-to-side to the common iliac vein. The ureter was implanted in the bladder.

The immunosuppressive regimen was identical to that utilized at the University of Minnesota.<sup>22</sup> Briefly, azathioprine (5 mg/kg/day) was begun on the day of surgery and tapered to maintenance levels of 2-2.5 mg/kg/day. Prednisone (2 mg/kg/day) was similarly started on the day of surgery and tapered to maintenance levels of 0.25-0.33 mg/kg/day. Beginning on the first post-operative day 30 mg/kg of antilymphoblast globulin (ALG) was given intravenously for 14 days with each dose monitored by daily platelet

counts. The above immunosuppressive regimen was used in all patients except HLA identical siblings in which the initial prednisone dose was 1 mg/kg/day and ALG 20 mg/kg/day. Rejection episodes were treated by increasing the oral prednisone dose, and then rapidly tapering the dose. Usually, a maximum of three such treatment courses were tried in any individual patient. When this was not successful in maintaining function of the graft, the steroid dose was rapidly tapered. When renal failure ensued, the graft was removed and the patient returned to dialysis to await retransplantation. "Pulse therapy" with methylprednisone was not used.

## RESULTS

Cumulative patient and graft survival are listed in Figure 1 for all transplants and for living related transplants only in Figure 2. Due to the smaller numbers (10) cumulative graft survival for our cadaver group was not determined separately. All patient mortality is included, even those who returned to dialysis after transplant nephrectomy. In this initial group of patients, we have not had an operative mortality or technical loss of a graft. In the living related group, during the first 18 months post-transplant, no deaths occurred.

**TABLE 1**  
**HISTOCOMPATIBILITY**

Number of Antigens Shared	Related Transplants	Number of Antigens Shared	Cadaver Transplants
4	8	4	1
2	12	3	3
0	0	2	2
	<u>20</u>	1	<u>2</u>
			8

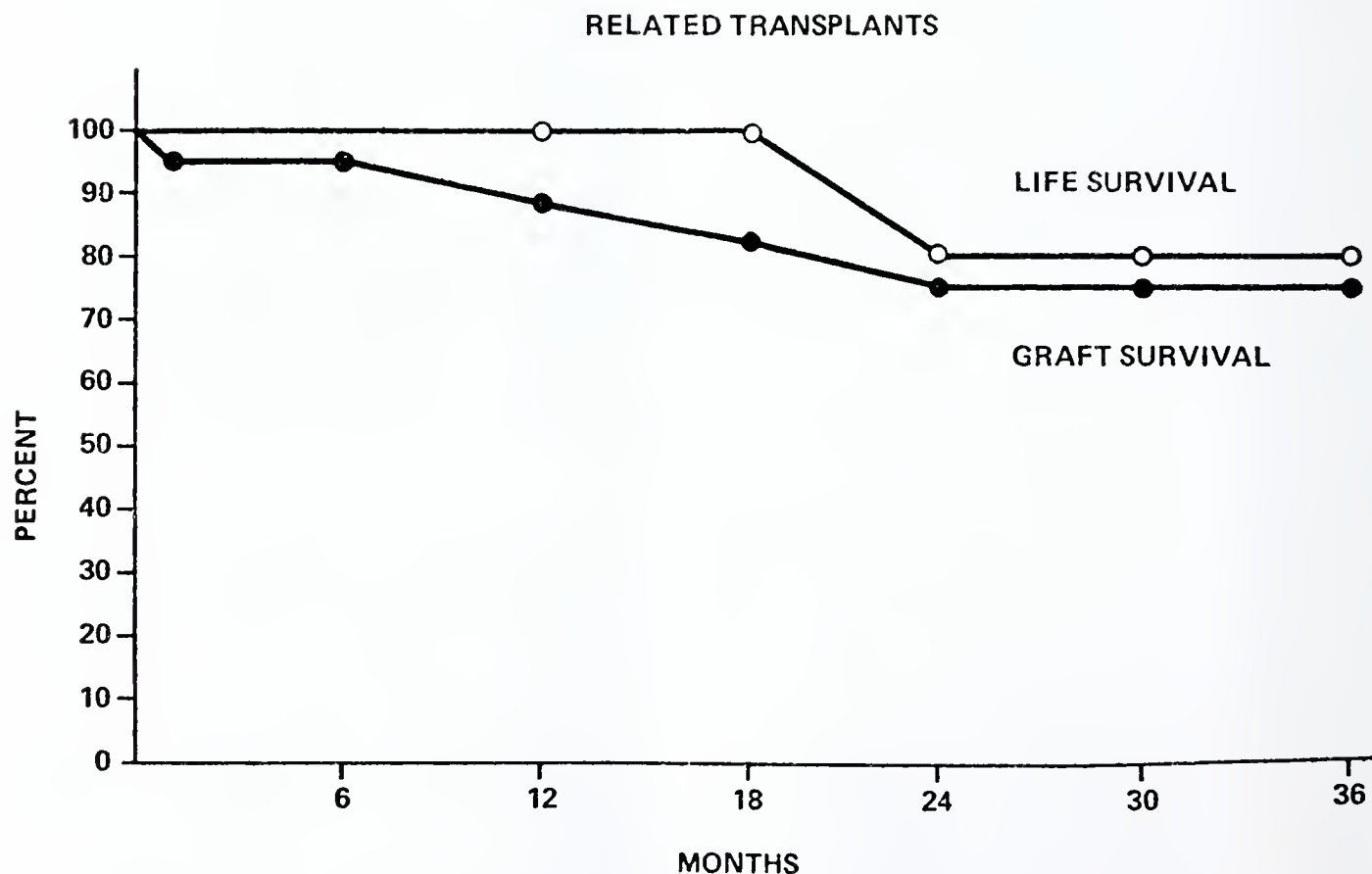


Figure 2.

## DISCUSSION

There are many factors that affect the outcome of renal transplantation. The more important are: (1) the source of donor, (2) age of recipient, (3) HLA tissue compatibility, (4) type of immunosuppression, i.e. use of ALG, (5) previous blood transfusions, and (6) preformed HLA antibodies. In general, patients with other associated complicating illnesses such as diabetes mellitus do less well.

Overall, the best graft and patient survival are achieved when recipients receive grafts from related donors as opposed to cadaveric kidneys.<sup>1</sup> Recipients receiving kidneys from HLA identical siblings (four antigen match) have the best graft survival. The difference in recipient graft survival receiving less well matched related kidneys as contrasted to cadaver kidneys is decreasing. Recently, it has been shown that recipients receiving a two antigen match cadaveric kidney do nearly as well as a similar match from a relative.<sup>23</sup> These results were obtained in patients less than 40 years of age receiving first transplants.

In cadaver transplants, there has been disagreement as to the correlation of HLA tissue compatibility and graft survival.<sup>3</sup> However, recently several series have shown improved graft survival with better tissue matches.<sup>2, 7, 5, 23</sup> In summary, HLA tissue compatibility correlates very well with graft survival in related transplants and the trend in cadaveric transplants is beginning to show the same results. When performing cadaveric grafts, most transplant centers strive for at least a two antigen match.

Recipient age has been regarded as an important prognostic factor in that older patients are at a higher risk with an increased patient mortality.<sup>2, 21, 29</sup> Patients over 45 years of age tolerate immunosuppression very poorly and frequently succumb from overwhelming sepsis. This is especially true in patients receiving cadaveric grafts because of the associated higher doses of immunosuppression to prevent rejection. Long term patient survival and graft survival in this group of patients is no better than that seen with chronic hemodialysis and controversy exists at this point whether such patients should be transplanted. On the other hand, recipients of well matched related kidneys do well, emphasizing the risk of increased immunosuppression

and resulting greater morbidity and mortality in the older patient.

Immunosuppression therapy has changed little in the past decade and azathioprine and prednisone continue to be the mainstays of treatment. The addition of antilymphoblast globulin in the early post-operative period has been controversial since its first clinical use by Starzl in 1966.<sup>24</sup> ALG is a biological product produced in horses, goats, rabbits, or guinea pigs following the injection of human thymic or lymph cells to stimulate antibody production. The source of ALG, variations in preparation, the dose given and the potency of the product all play important roles in the effectiveness of the final product. There is currently no widely accepted test for measuring the immunosuppressive potency of ALG. Notwithstanding these problems, currently there are several randomized prospective studies that demonstrate the efficiency of ALG.<sup>12, 13, 25</sup> We believe ALG to be an important adjunct to azathioprine and prednisone and have used an equine preparation from the University of Minnesota in all transplants performed in our program.

Within the past few years, there has been considerable change in the understanding of the effects of blood transfusions on survival of renal allografts. The original observations of Kissmeyer-Nielson<sup>11</sup> that hyperacute rejection occurred as a result of preformed antibodies, led to the recommendations that transfusions be avoided in potential transplant recipients to reduce exposure to HLA antigens. Subsequently, however, Opelz and Terasaki<sup>15</sup> showed that transfusion prior to transplantation may in fact be beneficial rather than detrimental. Since then other centers<sup>4, 5, 9, 17, 18, 27</sup> have demonstrated similar findings. The mechanism as to how a transfusion increases graft survival is poorly understood. There are two commonly cited theories: (1) transfusions select out the "hyper-responders" who develop cytotoxic antibodies and therefore become untransplantable, (2) transfusion leads to the development of enhancing antibodies. Other unknown factors are: (1) the nature of blood product to be given, i.e. frozen red cells, leukocyte poor packed red cells, or whole blood; (2) the number of units transfused and (3) time of transfusion. For whatever reason it has been clearly demonstrated that transfusion prior to transplantation yields higher graft survivals. Two



additional factors which have decreased the importance of performed HLA antibodies are more sophisticated cross matches and the utilization of previously drawn multiple monthly sera for the final cross match at the time of transplantation.

The role of splenectomy remains uncertain with reports either advocating<sup>10</sup> or refuting its usefulness.<sup>15,28</sup> Disadvantages of a splenectomy are: (1) patients may be at a greater risk from infection especially due to encapsulated bacteria (streptococcus pneumonia and hemophilus influenza); (2) the operative morbidity and mortality of the procedure. The advantage of splenectomy is an increased tolerance to azathioprine and ALG. With the concomitant increased azathioprine dose, better graft survival has been achieved.<sup>20</sup> There may be other unknown mechanisms as to how a splenectomy may enhance graft survival. Operative mortality for nephrectomy and splenectomy has been low and we have not had an operative mortality in approximately 50 patients. Rehabilitation of the hypertensive patient has been much easier following nephrectomy. Patients remaining on dialysis after bilateral nephrectomy and splenectomy while awaiting transplantation have not developed symptomatic anemia, fluid problems, or a greater incidence of bone disease.

In summary, the indications for transplantation have been expanding. Overall, graft survival has not changed significantly, but patient mortality has declined.<sup>6,19,26</sup> In the past, there was little doubt that cadaver transplantation was associated with a higher mortality than chronic dialysis; however, this may no longer be true. The progressive decline in sepsis and mortality has been attributed to less serious attempts to salvage poorly functioning kidneys with increased doses of steroids.

One of the unrealized goals of transplantation is specific immunologic tolerance. To date this has not been accomplished. Perhaps improved nonspecific enhancement of graft survival can be achieved through further research with transfusions and ALG.

At present, renal transplantation using both living related and cadaver donors is considered an acceptable therapeutic modality. The veteran patient tends to be older and commonly has other associated illnesses such as hypertension

and vascular disease, which places him in a higher risk groups. Nevertheless, our program has been successful and in this initial group of patients we have tried to utilize many of the previously mentioned factors advantageously. We anticipate expansion of the program, especially by performing more cadaver transplants. Shortage of cadaver donors has been one of the major limiting factors in being unable to perform more transplants.

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# The Stroke Problem

Ray Jouett, M.D.\*

The problem with stroke and its management, and especially the surgical management of the stroke patient, is still a point of controversy. The literature is replete with information regarding surgery upon stroke, the stroke candidate, and there is also the literature stating that surgery has no place in the treatment of the stroke patient.<sup>3</sup> New information is now available that shows that there is a place also in the treatment of the stroke patient with good results with the utilization of aspirin.<sup>8</sup>

The dilemma that I think everyone is confronted with in the treatment of the stroke patient is: (1) who is a candidate for surgery; (2) who is the non-candidate for surgery; (3) what is being accomplished with surgery; (4) what is accomplished if surgery is not performed and a medical regime is utilized. The answers to these specific questions are not all completely clear-cut but, hopefully, by reviewing the literature, some assessment about this problem can be put into perspective.

Until the early 1950s, it was assumed that people who had suffered some manner of cerebral vascular insufficiency had developed their difficulty because the site of the disease was within the intracranial compartment. In the mid-1800s, it was described that cerebral ischemia may have been on the basis of an occlusion of an extracranial vessel. Arteriography was developed in 1927,<sup>29</sup> and helped to bring a more precise diagnosis to this particular problem and remains the diagnostic procedure of choice in assessing whether an individual is or is not a candidate for surgery.

In spite of all of the information that has been gained up into the 1950s, it was not until 1954 that Eastcott, Pickering and Robb performed the first carotid endarterectomy, which is the procedure that has given emphasis for searching for extracranial causes for arterial diseases that might be producing an intracranial lesion.<sup>12</sup>

It has been estimated that approximately 75 percent of people with ischemic stroke syndromes, or with completed strokes that have recovered, have at least one obstructing lesion, or partially obstructing lesion, that will be surgically accessible within the confines of the cervical, or within the region of the arch. Also, approximately 40 percent of these will have their prin-

cipal occlusive location in the extracranial vessels of the cervical region.<sup>42, 43</sup>

## NATURAL HISTORY

The natural history of this disorder still has not been worked out.<sup>3</sup> A great amount of material is being accumulated through different studies and progress, and much data has been gained through nation-wide joint study of extracranial arterial disease, which began in 1961 and is being reported on from time to time.<sup>14, 15, 39, 40, 41, 42, 43, 44, 45</sup> Eventually their study will determine the efficacy of arterial reconstructive surgery in the treatment of cerebral vascular disease.

A complete stroke syndrome is a serious and incapacitating disorder with, as is well known, incalculable social and economic consequences for both the family and the patient.<sup>40</sup> Information from a recent study reveals that 27 percent of patients suffering a thrombotic stroke die within 30 days of the onset.<sup>17, 49</sup> Therefore, it is very becoming that more information be gained on the natural history of this disorder, and looking toward some method of offering prevention, if possible, to this extremely devastating socioeconomic problem. Approximately 200,000 people die each year from stroke, this being the third largest killer.<sup>40</sup>

## THE DEVELOPING PROBLEM

The natural history of the disorder is known to some degree, and usually the presenting problem to the patient is after a plaque has developed in the extracranial vessel, and the first manifestation may be that of a bruit that is picked up by the physician during a routine physical examination. The plaque may eventually become ulcerated and necrotic, and with this we have deposits of platelets in the ulcerated area which, in turn, dislodge or displace to the extracranial compartment, with symptoms from amaurosis fugax to transient sensory loss to frank motor loss involving the contralateral extremities.<sup>7</sup> The devastating episode in this event is a complete occlusion of the carotid artery, or an embolic phenomena, with an occlusion of the main trunk of the middle cerebral artery or other major vessel, which may lead to frank ischemia or death of the hemisphere.

With this information, concepts toward the significance of TIAs has been appreciated as the

\*750 Medical Towers Building, Little Rock, Arkansas 72205.

forerunners of strokes, and some 68 percent of people with strokes usually present with some manner of TIA. On the average, 30 to 40 percent of such patients will develop strokes if followed for some three to five years or longer.<sup>3,4,5,6</sup>

As was pointed out recently, patients with TIAs observed for long periods of time have a higher proportion of completed strokes than do those with shorter follow-ups. In the Mayo Clinic study, 160 patients were observed three to eight years, during which time 51 of them, 32 percent, developed cerebral infarction. Eighteen of these 51 died of their strokes, and seven others developed cerebral hemorrhage.<sup>49</sup>

On the other hand, among patients with TIAs observed for eleven months, only 10 percent had completed strokes. In practically all studies, the risk of cerebral infarction following TIAs was greater in the first year, but a significant number of completed strokes continues to appear in subsequent years as well.<sup>4,7</sup>

#### AGE AND SEX RELATIONSHIP

As was pointed out by Friedman, there was no definite relationship noted between the risk of stroke in patients with TIAs, their age, their sex, their race or other characteristics. In the Seal Beach study, for example, the incidents of cerebral infarction appeared to be higher in women than men, and higher also in persons over 70 years of age than in younger persons, as was pointed out by Marshall and Wilkerson<sup>26</sup> in *Brain*, 1971. Women had a better outcome than men, and age had no significant influence on the frequency of subsequent vascular events, as has been pointed out by Barnett in the recent study of the efficacy of aspirin, that women are offered no protection as compared to the protection that is offered men.<sup>8</sup>

#### BENEFIT OF SURGERY

The pressing problem that confronts everyone is what information do we have that reveals that there is definite evidence of benefit from surgery. Statistics of the TIA patient herald that anywhere from 30 to 80 percent will suffer a frank stroke within some three to five years.<sup>3,6,7</sup> Also, other statistics seem to bear out the fact that approximately 5 percent of all these people within the first year will come to a frank stroke.<sup>3,4,41</sup>

There seems to be no doubt that anatomic restoration of blood flow by carotid endarterectomy can be accomplished in at least 98 percent of patients with partially occluded vessels.<sup>41,42</sup> Also, arteries reconstructed by endarterectomy

will remain patent for many years, and with a patency rate approaching 95 percent, as has been pointed out by several authors.<sup>19,42</sup>

The operative mortality and morbidity on the transient ischemic patient is the problem that most attention needs to be focused upon, as this is the individual that is the ideal candidate for surgery and, as a result, should have the lowest mortality and morbidity. In order for this procedure to be acceptable, the morbidity and the mortality must be low, and it has been pointed out by several authors that the operative mortality must be one percent or below, and the morbidity should be no higher than 2 to 4 percent.<sup>39,42</sup> A recent article pointed out a mortality and morbidity incident to surgical repair that was high in the overall morbidity and stroke incident, being comparable in the surgically treated patient to the non-surgically treated patient which, of course, is not an acceptable standard for surgery upon this problem. But, in summation of the article, the last 100 cases being performed, there has not been morbidity nor mortality, and they ascribed as to the fact that one individual had performed the last 100 cases.<sup>47</sup>

In *Stroke*, 1977, a retrospective study was reported of 228 consecutive carotid endarterectomies conducted in a community hospital of some 600 beds. The combined stroke mortality rate of their series was 21.1 percent. Eleven carotid endarterectomies were performed for asymptomatic bruit, again with a combined stroke mortality rate of 18.2 percent. Fifty-seven endarterectomies were performed for transient ischemic attacks in the symptomatic carotid artery distribution, and a combined stroke mortality rate of 21 percent, twelve of the 57. Seventy-one endarterectomies were performed following mild to moderate strokes in the symptomatic carotid distribution, and the combined stroke mortality rate was 21 percent. Twelve endarterectomies were performed following severe stroke in the symptomatic artery distribution, with a combined stroke mortality rate of 41.7 percent.<sup>13</sup>

According to their report, there was no trend toward less operative strokes from 1970 to 1976. Their conclusion was that this was likely to represent the findings of a community hospital in which endarterectomy surgery was performed.

One of the striking points that was brought out in their article was that the most active surgeon performed an average of only one endarterectomy per month.



**TIMING AND INDICATIONS FOR SURGERY**

The timing of endarterectomy is of great importance in consideration of this problem. If a patient presents with transient ischemic attacks but without focal neurological loss, if the patient is medically feasible, the procedure can be done at the scheduled time without further preparation. It is important also to be sure that the electrolytes are in order, because so many of these people are hypertensive or on diuretics and, as a result, may have a deficiency of electrolytes which should be corrected before the patient is taken to the operating room.

The patient that has a stroke from which recovery or partial recovery should be staged, this procedure should not be performed for at least a month or six weeks after the insult,<sup>34,39</sup> during which time the patient should be covered with aspirin or anticoagulants, depending upon the philosophy of the physician.

The patient that has what was thought to be a TIA but on CT scan reveals evidence of a wet or infarcted area, likewise, even though the patient is without focal neurological deficit, should be postponed and not considered for surgery for perhaps a period of a month or six weeks, during which time the patient should be placed on a platelet suppressant agent or on Coumadin anticoagulation.

As has been pointed out, if there is a suspected thrombus at the site of the origin of difficulty, and especially should one be dealing with a high bifurcation in which there is expected to be difficulty in approaching this lesion, and much manipulation is expected, this patient should be postponed also for perhaps a month. In this study, they found that in 52 patients undergoing carotid endarterectomy for transient ischemic attacks, there was a thrombus or other friable material present in 66 percent of 24 patients operated upon within four weeks of the clinical attack, but in only 21 percent of the 28 patients in whom the time interval was longer. These data favor an embolic explanation for the clinical episodes and further suggest that the thrombus formation of an atheromatous stenosis or ulcerative lesion is intermittent, and that it has disappeared usually by the end of four weeks. Again, this should be reason for postponing surgery for a period of four to six weeks.<sup>20</sup>

It has been pointed out by many writers that the accepted dictum is that carotid lesions begin to approach significance when they are beyond

the 50 percent reduction, and that 50 percent reduction in diameter results in some decrease in amount of flow.<sup>6,10,30</sup> Others, and perhaps more correctly, feel that the diameter of the vessel needs to approach 80 to 90 percent to be of significance in regard to reduction of blood flow.<sup>31,34</sup> It is an established fact that vessels with little or no stenosis that have ulcerative plaques within this area are vessels that need to be given attention from the standpoint of endarterectomy, due to the thrombotic problem that develops within the ulcerative area, even though the stenosis is not of such magnitude as to produce a reduction of blood flow, the problem here being artery to artery embolization.

The indications for extracranial vascular surgery have been well outlined by many writers. The transient ischemic attack, the symptomatic bruit, the chronic cerebral ischemia, and strokes that have been stable or have improved following profound strokes, the non-hemispheric syndrome, these being the most common.<sup>2,5,9,14,17,33,37,42,45</sup>

**THE NON-SURGICAL CANDIDATE**

Perhaps not enough attention has been given to the patient that is not a candidate for extracranial arterial surgery. There are several people who fall into this classification: (1) the acute profound stroke with all the sequelae that go with it; (2) the stroke that is in progress or the progressing stroke with already some deficit; (3) severe intracranial disease beginning at the siphon and also manifest within other intracranial vessels, particularly the anterior cerebral, the middle cerebral distribution, the basilar itself being frequently involved, with marked areas of stenosis of the vessels described; (4) the severe cardiac patient, the patient with angina at rest; (5) the severe respiratory problem; and (6) the patient with malignancy or other degenerative neurological disorder in which the patient is not expected to live beyond six months or, at most, a year. These people would not be candidates for surgery.<sup>33,35,39</sup>

The acute profound stroke and the treatment of this disorder is a problem that has been wrestled with for some time. Murphey, in 1956, in his series recognized that the acute stroke is not a candidate for surgery.<sup>31</sup> It has also been estimated by some that if the patient is seen within an hour or so, perhaps an hour and a half to two hours following the insult, he would be a candidate to have a carotid operated upon if it is occluded. The cooperative study reveals

that the mortality of this particular patient is extremely high, from 45 to 50 percent.<sup>15</sup> Our experience with this particular patient reveals that the mortality within this range is between 45 and 50 percent.

There are patients that do need to be considered for acute endarterectomy, and these have been well outlined by Najafi and Associates.<sup>33</sup> They reported some 53 patients that underwent emergency carotid thromboendarterectomy. It was their feeling: (1) that patients with severe narrowing of one or both of their internal carotid arteries were having frequent TIAs; (2) that when there was a spontaneous stroke in the selective patient after undergoing angiography, such as the disappearance of a bruit or developing neurological loss; (3) that neither of these nor the patient who initially recovers from a carotid endarterectomy but goes on to develop a stroke as the result of a thrombosis of the endarterectomized vessel, is the acute, profound stroke of which we think, and these do not fall within the classification of that syndrome.

The patient with stroke in progress has been looked upon as a patient that needs to be considered for carotid endarterectomy, and the prognosis is perhaps somewhat better in this patient. Nevertheless, the mortality climbs as high as the patient with a frank stroke if we are talking in terms of perhaps more than one to two hours.

The patient with severe intracranial disease is, likewise, a patient to be looked upon very cautiously from the standpoint of being able to offer this patient a great amount of help with this problem. The patient may have carotid disease of a partial occlusive or ulcerative nature, but if there is severe stenosis of the cavernous portion of the internal carotid artery, along with diffuse intracranial disease along the anterior cerebral, middle cerebral or basilar group, then this patient is not a candidate for carotid surgery and should be treated with a medical regimen, depending upon the philosophy of the treating physician. Barnett's study is very impressive from the standpoint of treating his patient with aspirin if he is a male. Milligan's study would also make one believe that anticoagulants are effective.<sup>3, 7, 8, 27</sup>

It should also be understood that patients with malignancies that have life expectancy of less than a year should not be considered candidates for this type of procedure. Also, the patient with a degenerative or demyelinating disorder that is

not going to have a life expectancy beyond a year should perhaps best be treated medically for this condition. The patient with severe cardiac problems, as mentioned, angina at rest and respiratory impairment, high bifurcation lesions, again present serious problems.

#### TECHNIQUE

The technique of carotid endarterectomy is something that has been touched upon by many authors<sup>12, 21, 31, 35, 43</sup> and will not be looked at in this particular setting. But we have found that there are some things that offer help in this procedure and especially in regard to offering protection to the patient during the time the procedure is in progress. Prior to the operative procedure, the patient is connected to an EEG for continuous monitoring of the patient from the time he enters the operative suite until the procedure has been terminated. He is also monitored continuously with an intra-arterial monitor. This is started before the patient is anesthetized. We have found that some of these people have developed hypotension during the period of induction, and one patient of our series suffered a stroke at the time of induction. For this reason arterial monitoring is started on the patient before he is anesthetized.

An inlying shunt is also used in this procedure. In the last 200 procedures that have been done, the shunt has been employed, and it has been employed without complications. During the time that the arterial shunt is in place, it is checked frequently to be sure that it is remaining open. This is done by means of the Doppler.

Following completion of the arteriotomy, the vessel is checked frequently again for a period of some five to seven minutes after the procedure to be sure the vessel remains patent and this, likewise, is done by means of the Doppler. Heparin, 5000 units, at the time the artery has been exposed and before the vessels have been clamped, is given intravenously, and the Heparin is not reversed at the conclusion of the procedure.

Postoperatively, many of these patients will exhibit hypertension, especially if they have been hypertensive before. We employ some antihypertensive agent as a continuous drip, if this becomes a problem. Usually if the blood pressure goes above 200, we can use some method to bring it down to the range of perhaps 140 to 160, depending upon what the patient's pressure may have been preoperatively.



Also, a certain percentage, and this is usually low, will have hypotension following surgery, and it is necessary to use some agent to bring the blood pressure back to the preoperative levels. For this, Neo-Synephrine drip is used, which we have found very effective. These people can usually be weaned off the Neo-Synephrine within a period of some twelve to eighteen hours following surgery.

#### COMPLICATIONS OF ENDARTERECTOMY

Complications of this procedure are many and have been reported in the past,<sup>42</sup> but the most serious complication is that of cerebral ischemia secondary to either a thrombosis of the endarterectomized vessel or an embolic phenomenon. Hematoma of the wound is also a likely complication, as Heparin is used during the time the patient has the indwelling shunt, and this occasionally will cause a wound hematoma. As mentioned previously, we do not reverse the Heparin, and out of the past 200 endarterectomies we have had to return three to the operating room because of wound hematomas.

#### THE ASYMPTOMATIC CAROTID LESION

The asymptomatic lesion may range all the way from an asymptomatic bruit that is picked up during routine physical examination of the carotid, or difficulty may be found when the carotid is being studied for some other reason, but without evidence of symptoms referable to the carotid system. The question that is so difficult to resolve is what must be done about this patient. Baker,<sup>3</sup> in his prospective study of transient ischemic attacks in Cerebrovascular Disease, 1971, reported on 79 patients with transient ischemic attacks who were observed for a period of up to ten years. The average length of follow-up was 41 months and, at the end of this study, 71 percent were alive, 22 percent were dead, and seven had been lost to follow-up. Of the 22 percent that died, this being a mortality of 4 percent per year during the first four years, cerebral infarction was the cause of death in only two patients. Heart disease, including myocardial infarction and congestive heart failure, was responsible for the death of ten patients, which made up 59 percent. New cerebrovascular events occurred in 70 percent of the patients, and new cerebral infarctions occurred in 22 percent. Only two of these patients died as a result of the new stroke. New transient attacks occurred in 57 percent in his summary, and his summary was

that during the follow-up observation, averaging 41 months. Twenty-two percent developed a new stroke. Approximately 5 percent of the patients at risk during each follow-up year has new strokes.

Among the 17 patients with new strokes, two died of strokes and eight others had moderate or severe residual disability, and thus, over a long period of follow-up, only 15 percent of the patients had major strokes leading to significant disability or death. Approximately 4 percent of patients at risk during each follow-up year died, and most of the risk mortality was from associated disease, and 59 percent of those deaths were due to cardiovascular disease in his study, his conclusion being that these data should be taken into consideration when treatment of cerebrovascular disease is considered by surgical means which, in itself, entails a significant mortality.

Leven and Associates, in the *Journal of Vascular Surgery*, 1973, reported a personal series of 250 patients who underwent surgical reconstruction of the carotid artery between 1961 and 1963, and in 60 of these cases, stenosis was greater than 50 percent in both internal carotid arteries, but reconstructive surgery on the carotid artery was performed only on the symptomatic side. All of these patients were followed for a minimum of two years, and there were no further strokes. The second side was operated on only if the patient became symptomatic after the first operation in their series, and it was necessary that they operate only upon two of that group of patients.

Javid and Associates,<sup>23</sup> in the *Archives of Surgery*, 1971, reported 56 patients who were asymptomatic for cerebral ischemia, but in whom severe cardiac stenosis was detected on one or both sides during the preparation for elective surgical procedures or prior to the medical management of hypertension. In their series of patients in whom carotid arteries were operated upon first, there was one surgical death and two post-operative strokes. These authors were of the opinion that endarterectomies for asymptomatic carotid bruits in this setting were ill-advised in hypertensive patients over 65 years of age who have a history of myocardial infarction. In younger patients without several risk factors, they recommended carotid endarterectomies for severe internal carotid artery stenosis that is asymptomatic.

In our series of the last 30 months, in which 200 patients have been operated upon for carotid disease, eight of these people were asymptomatic from the standpoint of their carotid disease. Of this group, we have had no neurological complications and have had no difficulty with the asymptomatic patients. All eight of these asymptomatic patients have fallen within the age group of 60 to 67 and have all been without risk factors from the standpoint of chest or cardiac disease.

We believe that the asymptomatic patient probably will eventually get into difficulty and that this patient should have surgery if he is not in any type of medical difficulty. We also believe this is a procedure that should be done by the surgeon who has a mortality and morbidity rate of less than 1 percent.

It is important that this patient not be lost to follow-up if, at this particular time, he does not desire to have surgery with a known carotid stenotic lesion. The patient with an asymptomatic bruit who does not desire to have invasive procedures should likewise be followed at four to six-month intervals.

Fields reports, likewise, in *Stroke*, May-June of 1978<sup>16</sup> that this should not be undertaken unless the surgeon has a record of less than one percent mortality and morbidity.

### SUMMARY

What one desires is to prevent the development of a stroke, and this, of course, does not alter the disease process, but hopefully the patient will remain intact neurologically until his final sequelae. Eventually, it is believed that the joint study will put all of this information before us. Baker's study,<sup>3</sup> which has been referred to previously on the natural history of a patient with a transient ischemic attack, reveals a survival rate of 77 percent of his 79 patients with 41-month follow-up, and that of the infarct group was 58 percent. Of his 79 patients, new strokes developed in 17, which is 22 percent, and new transient ischemic attacks developed in 47 patients, or 57 percent.

Chung<sup>9</sup> reported in his series three and seven percent respectively over a six-year period, which is an extremely impressive result of the carotid surgery.

Fields<sup>14</sup> reports six percent cerebral infarction as opposed to 12 percent medically treated. Bauer, et al.<sup>4</sup> also bear this out in their report.

It is our belief that this is a procedure of merit, and statistics seem to bear this out.

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# Medical Grand Rounds

## University of Arkansas for Medical Sciences

### Acute Aortic Insufficiency

James A. Scovil, M.D., A. J. Thompson, M.D., Joe K. Bissett, M.D.,  
Marvin L. Murphy, M.D., and James E. Doherty, M.D.

**A**cute aortic insufficiency is a catastrophic illness. The natural course of this disease is certain death preceded by fulminant heart failure if not interrupted by expedient aortic valve replacement. Time is of the essence. Failure of the clinician to recognize acute aortic insufficiency usually spells disaster for his patient. It is the purpose of this review to reacquaint the clinician with the various manifestations of acute aortic insufficiency. The difference between this disease and its better known clinical counterpart, chronic aortic insufficiency, will also be discussed.

#### **Etiology of Acute Aortic Insufficiency and Pathology of Aortic Valvular Endocarditis**

As the name implies, acute aortic insufficiency results from a sudden cataclysmic event. The spontaneous rupture of a myxomatous leaflet, the traumatic breach of a normal cusp, or an aortic root dissection are all good examples.<sup>1-5</sup> The most common cause of acute aortic incompetence is infectious endocarditis.<sup>1,5,6,7</sup> Very often a bicuspid valve is involved,<sup>5,8</sup> the leaflets of which are either perforated or destroyed. Sequelae of aortic valvulitis include myocarditis, aortic ring abscesses, pericarditis, mycotic aneurysms of the ascending aorta, papillary muscle necrosis, and systemic artery embolization. Myocarditis is a common occurrence in patients with acute infectious endocarditis, but rarely is it a cause of congestive failure.<sup>6</sup> Conceivably, myocarditis could create rhythm disturbances. A potentially much more severe sequela is the development of an aortic ring abscess.<sup>6,7,9</sup> This occurs in over 50% of the patients with acute aortic endocarditis. Various degrees of atrioventricular block may develop if the abscess extends into the interventricular septum. Pericarditis can result from aortic ring or intramyocardial abscesses by spread of the infection to the pericardial space. Aortic ring abscesses are respon-

sible for the development of mycotic aortic root aneurysms. The surgeon replacing an acutely aortic valve is faced with a special problem in the presence of an aortic ring abscess. If the abscess is not completely debrided, it becomes a continuing source of sepsis. Infection of an aortic valve prosthesis with a subsequent perivalvular leak and the reappearance of acute aortic insufficiency can also occur.

Finally, mycotic embolization does occur systemically.<sup>6</sup> In descending order the following organs are involved: kidneys, spleen, brain, liver, heart, lungs, pancreas. Infarcts and/or abscess formation may be the result. Embolization to coronary arteries may produce papillary muscle ischemia. Mitral regurgitation may result from the direct extension of the infectious process from the aortic valve to the anterior mitral leaflet.

#### **Hemodynamics**

The hemodynamic consequences of acute aortic insufficiency can be better understood when they are related to the hemodynamic alterations that occur in chronic aortic insufficiency. The hearts of patients with chronic aortic insufficiency have time to adapt. Responding to the gradual increase in blood volume, the left ventricle dilates. This dilatation prevents left ventricular pressure from rising; stated another way, there is an increase in left ventricular compliance.<sup>1,10,11</sup> As defined by the Frank-Starling mechanism, an increase in left ventricular diastolic volume augments myocardial contractility, left ventricular stroke volume, rate of ejection, and ejection fraction. Myocardial hypertrophy also helps maintain left ventricular function. Cardiac output is preserved without a requisite tachycardia. The rise in stroke volume causes the systolic blood pressure to increase. The diastolic blood pressure diminishes as a result of the regurgitant flow, and the "run-off" made possible by a normal peripheral vascular resistance. The resultant wide pulse pressure is a character-

Reprints: James A. Scovil, M. D., Assistant Professor, Department of Medicine, University of Arkansas for Medical Sciences, 4301 West Markham Street, Little Rock, Arkansas 72201.  
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istic finding in a patient with chronic aortic regurgitation.

Acute aortic insufficiency behaves quite differently.<sup>1,11,12</sup> Basically, the left ventricle simply does not have enough time to adapt to the sudden increase in diastolic blood volume. Since acute left ventricular dilatation in this situation is impossible, left ventricular diastolic pressure rises. Left ventricular compliance diminishes, often dramatically. There is an increase in myocardial wall tension which leads to a loss of myocardial contractility. The left ventricular ejection fraction, rate of ejection and stroke volume all decrease. A tachycardia develops in an attempt to maintain cardiac output. If the loss of systolic flow is not compensated by a rise in peripheral vascular resistance, the systolic blood pressure will diminish. This, combined with the fact that the diastolic blood pressure cannot fall below the elevated left ventricular diastolic pressure, ensures that the pulse pressure will not appreciably widen in a patient with acute aortic insufficiency.

### Manifestations

Unless there is an associated atrioventricular block, patients with acute aortic insufficiency always have a tachycardia.<sup>1,5,7,11,12</sup> This is distinctly not true of patients with compensated chronic aortic regurgitation. Because of peripheral vasoconstriction and low cardiac output, patients with acute aortic incompetence are often cool to the touch and may appear cyanotic. The signs of chronic aortic insufficiency are absent. This includes the to-and-fro murmur auscultated over a partially compressed femoral artery (Duroziez's murmur), and the pistol-shot sounds appreciated over peripheral arteries (Traube's sounds). The reason for their absence lies in the fact that these patients with acute aortic insufficiency have relatively normal pulse pressures. There is never a Corrigan's or bounding pulsation in a patient with acute aortic regurgitation. Pulses alternans may be present indicating severe left ventricular failure.

If right heart failure develops in response to left ventricular decompensation and raised pulmonary artery pressures, elevated jugular venous pulsations will result. The A and V waves tend to be equal. If tricuspid insufficiency develops, the V waves will predominate.

The precordium can be deceptively unremarkable in patients with acute aortic insufficiency.

A mid-diastolic apical retraction is palpated at times and coincides with premature closure of the mitral valve (See below). The left ventricular apical impulse is not sustained nor is it displaced laterally. An S3 may be palpated. A left parasternal heave, when present, signifies right ventricular failure.

The first heart sound in patients with acute aortic insufficiency is either soft or absent. This is the result of presystolic closure of the mitral valve which, in turn, is a response to the precipitous rise of the left ventricular diastolic pressure. Elevation of left ventricular diastolic pressure above left atrial pressure will seal the mitral valve. Premature mitral valve closure in this instance serves a protective role. It partially inhibits the transfer of elevated left ventricular diastolic pressure, retrogradely, through the pulmonary tree; and prevents, to some degree, the occurrence of pulmonary edema.

The diastolic murmur of acute aortic insufficiency is usually abbreviated. It is not the long, blowing diastolic murmur so characteristic of chronic aortic insufficiency. The reason for this is that the aortic and left ventricular pressures tend to equalize in mid to late diastole. This effectively terminates regurgitant diastolic flow. The murmur is also characteristically soft and medium-pitched because the flow rate of the regurgitant volume is reduced. This is owing to the narrow pressure gradient between aorta and left ventricle. The Austin Flint murmur is a low-frequency diastolic rumble which is created by turbulence of antegrade flow (left atrium to left ventricle) across the coapting mitral leaflets. This murmur is always mid-diastolic in patients with acute aortic insufficiency since this is the time the mitral leaflets are coapting. Third heart sounds are heard in patients with acute aortic insufficiency. Rarely are fourth heart sounds appreciated because there is late-diastolic termination of flow between left atrium and ventricle.

### Laboratory Results

The chest x-ray always reveals some component of pulmonary venous hypertension and commonly demonstrate frank pulmonary edema.<sup>1,12</sup> Contrasted with what is seen in patients with chronic aortic regurgitation, the heart size is usually normal. The electrocardiogram frequently reveals some nonspecific ST-T wave changes. If there is interventricular septal abscess formation, various degrees of atrioventricular

block may be seen. Left ventricular hypertrophy is almost never seen in patients who have been previously hypertensive. Conversely, patients with chronic aortic regurgitation often exhibit left ventricular hypertrophy.

The echocardiogram is quite helpful in diagnosing aortic insufficiency.<sup>13</sup> The mitral valve is always observed to close prior to the onset of ventricular systole. This is a graphic demonstration of the reversed gradient that exists between the left ventricle and left atrium toward the end of diastole. Uncommonly, left ventricular diastolic pressure will supercede aortic diastolic pressure. In these instances, the echocardiogram has shown the aortic valve's opening prior to ventricular systole.<sup>14</sup> Diastolic fluttering of the mitral valve and/or interventricular septum are not always seen echocardiographically in patients with acute aortic incompetence. They are more commonly observed in patients with chronic aortic insufficiency.

Cardiac catheterization will confirm the presence of severe aortic insufficiency, the loss of left ventricular compliance, and may even unmask the etiology of the insufficiency.

### Treatment

Once the diagnosis of acute aortic insufficiency is made, the patient becomes a prospective candidate for an aortic valve replacement.<sup>1,12,15,16</sup> With rare exception, there is no choice other than to operate. The mortality rate approaches 100% in patients who are in congestive failure and are offered only medical treatment. Patients with active endocarditis who have only received short courses of antibiotic therapy are still operative candidates.<sup>17,18</sup> They only have to manifest some evidence of left ventricular decompensation. The determining factor for surgical intervention is congestive failure, not the length of antibiotic therapy.

This is not to say that medical therapy does not have a role in the treatment of heart failure secondary to acute aortic insufficiency. It is used in conjunction with surgical therapy when surgery is not immediately available. Also it ensures the patient's optimal hemodynamic state prior to surgery. Digitalis and diuretics are the conventional forms of treatment. More recently, nitroprusside has been used to treat patients with acute aortic incompetence.<sup>19,20</sup> This drug is an arteriolar dilator which decreases peripheral vas-

cular resistance. Forward cardiac output is increased, the regurgitant fraction diminishes, and myocardial contractility is enhanced. However, procrastination with medical therapy alone cannot continue for too long. In the setting of congestive failure and acute aortic insufficiency, medical therapy is a staying action. Aortic valve replacement is the definitive treatment, and must be implemented without undue delay.

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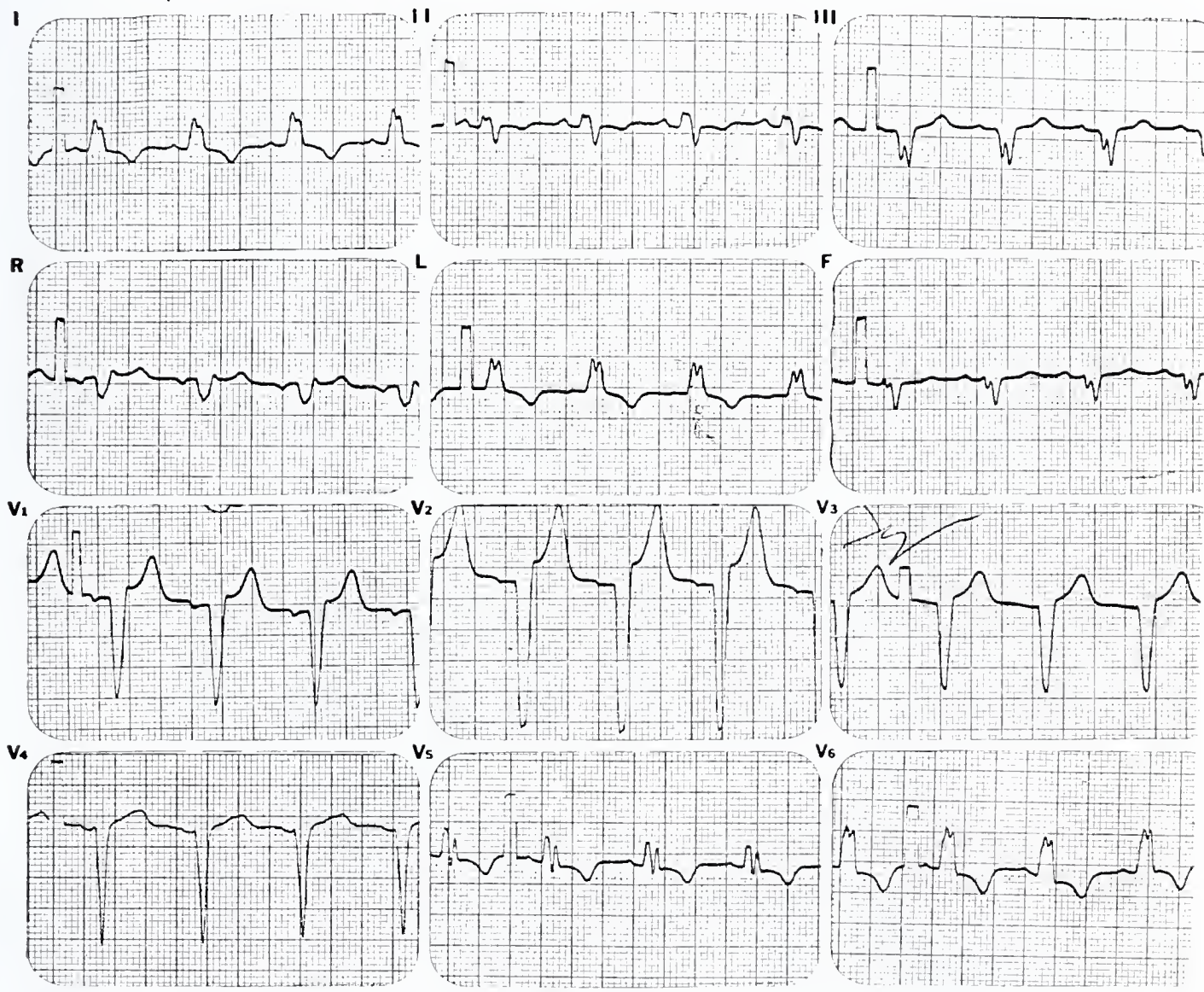
The Department of Cardiology, University of Arkansas College of Medicine

(See Answer on Page 152)

**HISTORY:** Mr. D. is a 60-year-old white male followed for hypertension. He has been episodic about taking his medications over the years and is known to have progressively developed cardiomegaly. He has been free of cardiac symptomatology. An ECG done one year ago showed probable left ventricular hypertrophy. The patient's current ECG is shown. An interpretation is rendered and, based on the reading, the patient asked several pointed questions concerning his prognosis with relation to the electrocardiographic change.

Which of the following statements are true and which are false?

- The patient is likely to remain free of cardiovascular symptomatology for ten years or more.
- The patient has one chance in two of expiration within ten years.
- Most persons with this change in their ECG have no prior evidence of cardiovascular disease.



#### ELECTROCARDIOGRAPH REQUEST

John W. Watson, M.D.

Assistant Professor

Division of Cardiology

University of Arkansas for Medical Sciences

4301 West Markham

Little Rock, Arkansas 72201



# Office Orthopaedics

## Chondromalacia Patellae

Philip H. Johnson, M.D.\*

### CHONDROMALACIA PATELLAE

Of all the knee problems encountered by the orthopedist, those which involve the patella are the most numerous and obscure. The recent popularity of arthrography and arthroscopy has in part been due to mechanical knee symptoms of patellar origin masquerading as meniscus pathology. "Chondromalacia," first described by Budinger,<sup>2</sup> has been used too loosely in the past and should express only the pathologic changes which occur in articular cartilage. This paper will present chondromalacia as the common denominator for several peripatellar problems, all somehow interrelated in an interesting web.

### ANATOMY

The patella is the largest sesamoid bone in the body. It acts as a mechanical fulcrum, facilitating extension of the knee by 50%.<sup>17</sup> The articulating surface of the patella is composed primarily of two facets, the medial and the lateral, articulating with opposing surfaces of the femoral trochlea (Fig. 1). The median ridge sepa-

\*Little Rock Orthopedic Clinic, P.A., 9500 Lile Drive, P. O. Box 5270, Little Rock, Arkansas 72205.

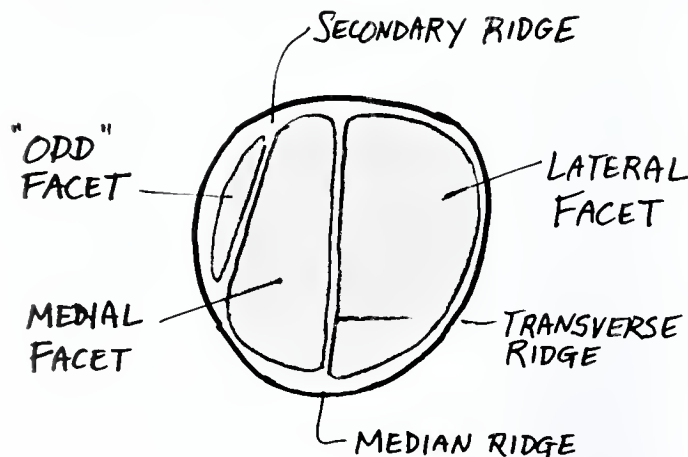


Figure 1.  
The normal patella.

rates these two facets. A secondary ridge is present medially, separating the medial facet from the "odd" facet. Contact between opposing surfaces of the trochlea and patella are illustrated graphically by Goodfellow, et al.<sup>6</sup> Note that as the patella slides from full extension, where it rests on a suprapatellar fat pad, to 20 degrees of flexion, the most inferior surface first contacts the trochlear ridge (Fig. 2). At 45 degrees of flexion, the mid-portion of the patella is contacted and at 90 degrees, the most superior portion applies pressure on the most inferior part of the trochlear groove. An interesting thing happens at 135 degrees of knee flexion. The patella rests on the odd facet medially and the lateral portion of the lateral facet. These two areas articulate with the most lateral portion

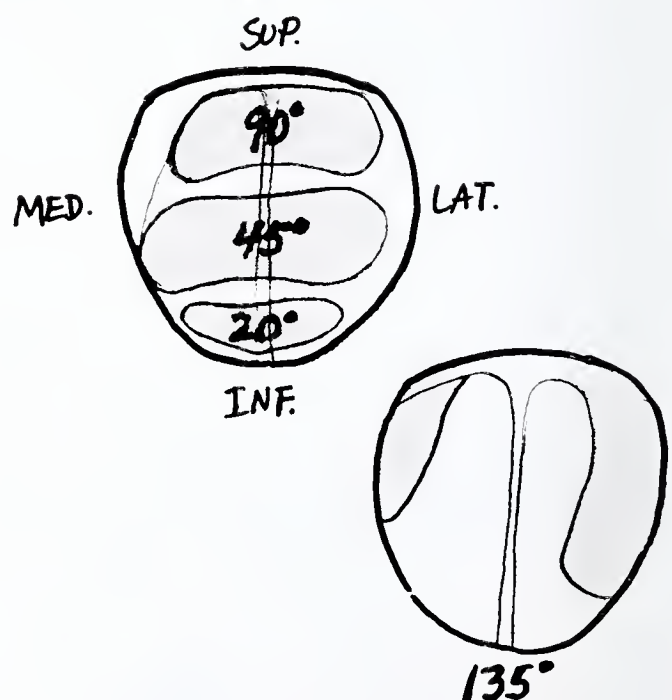


Figure 2.  
Contact areas on the patella in varying degrees of flexion (Goodfellow, et al<sup>6</sup>).

of the medial femoral condyle and the lateral femoral condyle, which otherwise articulates with the tibia in complete extension.

As noted above, the primary function of the patella is to make knee extension stronger and more efficient. Kettlekamp<sup>12</sup> has shown that in patellectomized patients there is a decrease of 51% in quadriceps strength for isometric contraction at 20 degrees. The patella, in fact, therefore increases the extension moment arm, decreasing the force required to extend the knee in any given angle of knee flexion. The shape of the under surface of the patella and that of the opposing trochlea make a smooth gliding surface which has a very low coefficient of friction. The patella also protects the anterior aspect of the knee from trauma.

### CLINICAL

Pain is the most common presenting complaint, and usually is diffuse. After close questioning, it may be localized to the anterior aspect of the knee and more specifically peripatellar. Sometimes, the patient makes a reference to the center of the knee as the site of his pain. This pain may be referred down the patellar tendon to the anterior tibia or outward to the medial or lateral joint lines, usually medial. This is responsible, not infrequently, for confusion with meniscal pathology. The pain is dull and aching in character. It is made worse by knee flexion, squatting, walking up and down stairs, and other activities where the articular surface of the patella is compressed against the femoral trochlea. Crepitus is the palpable, sometimes audible, grating of the under surface of the patella as it slides in the trochlea. The roughened cartilaginous surface rubs on flexion-extension of the knee. To examine, ask the patient to flex and extend the knee against resistance with the palpating hand on the patella. Crepitus may be expressed as popping by the patient and assumed by the physician to be a loose piece of meniscus. It is interesting to note, however, that the crepitus of chondromalacia usually occurs in the last 45 degrees of extension and the popping associated with a torn meniscus occurs between maximum flexion and 90 degrees. "Giving-way" is another common symptom. It is caused by quadriceps weakness or by involuntary relaxation of the quadriceps in order to relieve pain on active knee extension. Swelling of the synovium and knee effusion are not uncommon with more ad-

vanced cases where fibrillation and degeneration of cartilage exist.

Other physical findings consist of tenderness medially and/or laterally about the patella. With the knee in full extension, the medial and lateral facets may be palpated by displacing the patella from side-to-side and palpating through the skin. A positive "patella compression test" is elicited with the knee in extension and by asking the patient to contract the quadriceps. As the patella is pulled up by the patient's voluntary quadriceps contraction, continuous downward pressure is applied to the patella, producing pain and a positive test.

### PATHOLOGY

Goodfellow, Hungerford, and Woods<sup>7</sup> recently described in elaborate chronologic order the events which occur during this cartilaginous disease. In the first step, softening in the intermediate zone of cartilage occurs. This may be appreciated on skyline x-rays of the knee made at 30, 45, and 90 degrees of knee flexion, as the authors recommend.<sup>5</sup> The softening of the cartilage permits increased compressibility and narrowing of the joint space. During the next proliferative phase, an edematous "blister" may occur which is apparent grossly. Later, we see proliferation, fragmentation, and fissuring of articular cartilage which gives it a "crabmeat" appearance. These large clefts extend down to the subchondral bone. Finally, ulceration of the cartilage leaves exposed subchondral bone. Eburnation and sclerosis of underlying bone occur and the general picture of degenerative arthritis is seen. This may be the process which occurs in all osteoarthritis and is more easily seen in this subcutaneous area. With experience, arthrography may be a valuable diagnostic tool. Joint narrowing (softening of cartilage), fissuring, and fragmentation are better seen with dye in place on skyline films.

### ETIOLOGY

Up to this point, the basic process of chondromalacia, which is common to all causative factors, has been discussed. However, several peripatellar conditions exist which are thought responsible for this degenerative process. One or more of the following may exist in any individual patient.

I. *Trauma*: Injury to the articular cartilage of the patella is frequently seen as a result of direct trauma to the patella. A fall to the knee may precipitate this process. An auto accident with the patella slamming against the dashboard



of the automobile may start this process, which may be slowly progressive. Fractures of the patella producing incongruous joint surfaces may result in chronic symptoms. It is not uncommon for patients who require ligament repairs, meniscectomies, etc., to have a prolonged period of immobilization. Chondromalacia from this disuse and osteoporosis often make rehabilitation of the knee difficult.

2. *Patella Alta*: A "high-riding" patella has been noticed by many authors as being associated with and productive of chondromalacia.<sup>10</sup> Three methods of determining patella alta are Blumensaat's test, Laurin's test, and Insall's test (Fig. 3). Blumensaat,<sup>1</sup> in 1938, described a line projecting forward from the dense bone of the intercondylar area of the femur. With the knee in 30 degrees of flexion (standard lateral view of the knee) the line should touch the inferior pole of the patella. When the patella falls above this line, patella alta is considered present. Insall and Salvati<sup>9</sup> describe a method measurement with the knee in any position of flexion. The vertical distance of the patella is compared to the distance between the inferior pole of the patella and the tibial tubercle. A deviation of greater than 20%, in the length of the patellar tendon, is considered

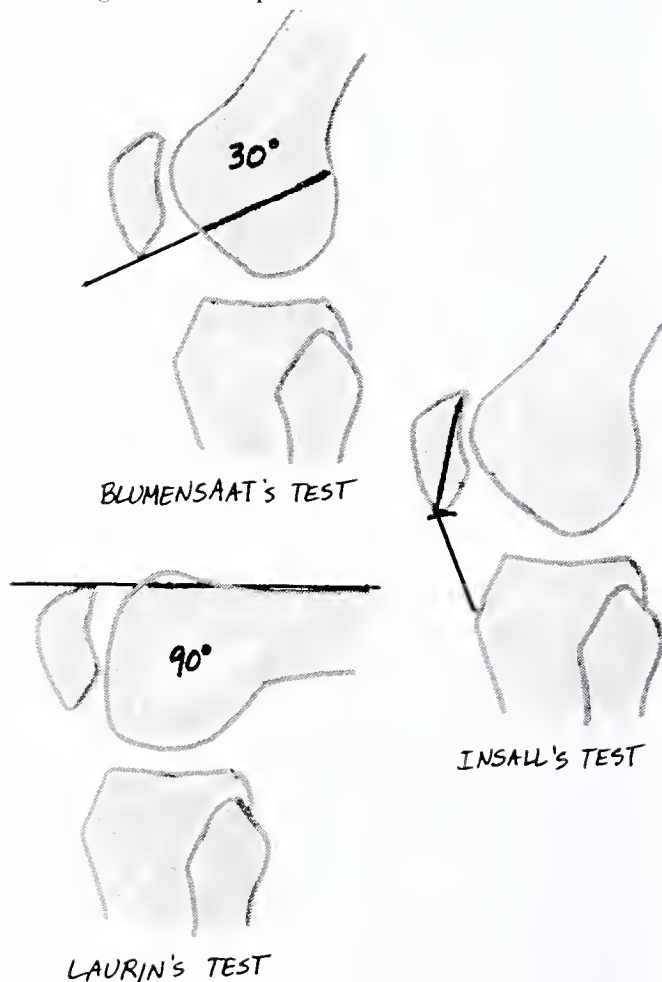


Figure 3.

abnormal. Laurin and Labelle<sup>13</sup> state that a line extending down the anterior aspect of the shaft of the femur should pass over the superior pole of the patella with the knee flexed at 90 degrees. If the patella is above this line, it is high-riding.

3. *Recurrent Dislocation*: The patella is suspended over the anterior knee by muscles and ligaments which attach about it (Fig. 4). Proximally, the quadriceps tendon inserts in a characteristic fashion into the superior pole of the patella. Inferiorly, the patella tendon (patella ligament) extends from the inferior pole to the tibial tubercle which is usually displaced somewhat laterally. An angle is thus established, referred to as the "Q angle."<sup>4</sup> This is compensated for normally by a high lateral femoral trochlea facet, holding the patella in a normally aligned position.

Medially and laterally, the patellofemoral and meniscopatellar ligaments are simply thickenings in the medial and lateral retinaculum. Sometimes the iliotibial tract laterally sends an extension to the superior pole of the patella which is quite thick. This normal balance of patella restraints can be interrupted by a sudden traumatic, forceful, ripping of the medial retinaculum producing lateral dislocation. If this is not surgically repaired, chronic dislocation may occur from imbalance of the entire system.

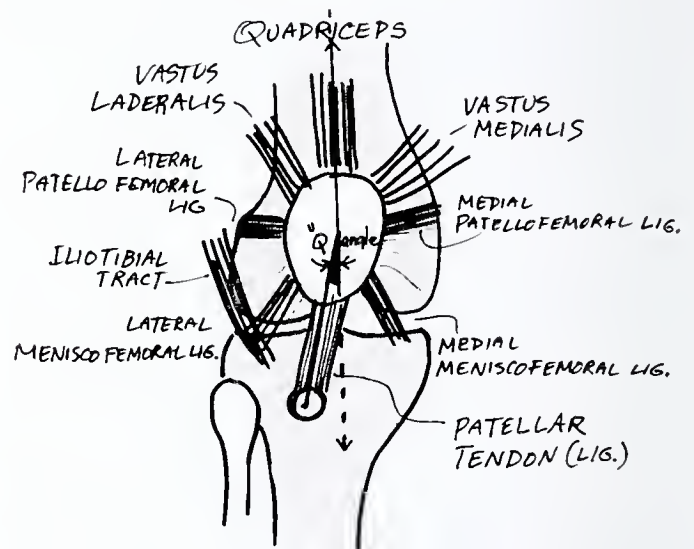


Figure 4.

## PATELLA:

Facet Ratio = RE . . . Not 1:3

RI

Depth Index = W . . . 3.6 - 4.2

H

Facet Angle = ERI . . .  $130^\circ \pm 10^\circ$ 

## TROCHLEA:

Depth Index = E' I' . . .  $5.3 \pm 1.2$ 

T R'

Sulcus Angle = E' TI' . . .  $140^\circ \pm 5^\circ$ Angle of Inclination . . .  $3.5^\circ - 6.4^\circ$

This patient is characteristically an adolescent female and may have the findings of subluxation noted below. The recurrent slipping of the patella over the high femoral trochlea may produce osteochondral fractures of the patella or trochlea, and cartilage damage (chondromalacia).

4. *Chronic Subluxation:* Some patellae developmentally have a propensity for lateral displacement. Originally, this was thought to be limited to females with a wide pelvis or genu valgus. This has more recently been demonstrated in robust male athletes.<sup>8</sup> Hughston points out that with quick "cutting" change of direction, internal rotation of the femur on the fixed tibia produces subluxation. Examination of this patient, sitting with knees flexed at 90 degrees, shows the patellas to be looking outward.

In addition to the usual symptoms of chondromalacia, the patients may describe a popping, dislocating, or "going-out" of their knee. This represents lateral subluxation of the patella, followed by voluntary muscle contraction and flexion which brings the patella back into alignment. The repeated rubbing of the patella over the trochlea produces degeneration and chondromalacia.

The "Q angle" is formed with the knee in extension, by projecting a line from the anterior superior iliac spine to the center of the patella, downward and outward, to the tibial tubercle. Less than 15 degrees is considered normal and more than 20 degrees is definitely abnormal.<sup>10,11</sup> Insall<sup>10</sup> has reported an abnormal "Q angle" in the majority of his cases of subluxation.

Ficat and Hungerford<sup>5</sup> summarize and illustrate the patella and trochlear "indices" which indicate patella and/or trochlea dysplasia. Sky-line patellar x-rays are made at 30, 45, and 90 degrees with the cassette perpendicular to the x-ray beam. A low lateral femoral trochlea or a hypotrophic medial patellar facet raises suspicion of lateral subluxing patella (Fig. 5). Note the patellar "facet ratio" compares the relative length of the medial and lateral facets which should be no more than 1:3. The patellar "depth index" compares the length of the patella at the equator to the height of the articular portion and this ratio should be no more than 4.2. The patellar "facet angle" is an obtuse angle whose normal limits are 130 degrees, plus or minus ten. The "trochlear depth" is expressed as a ratio which is normally 5.3, plus or minus 1.2. The "sulcus angle" is normally 140 degrees, plus or minus 5.

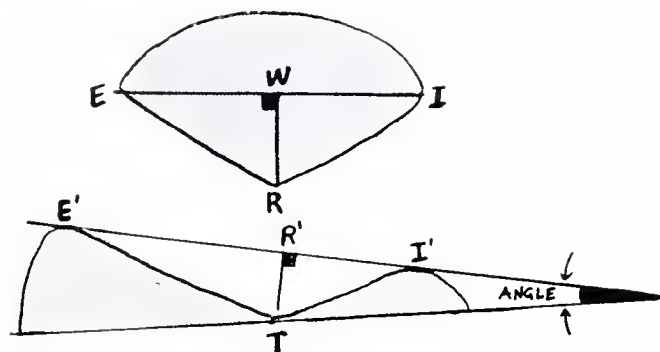


Figure 5. Patellar and Femoral Indices (modified from Ficat and Hungerford<sup>5</sup>).

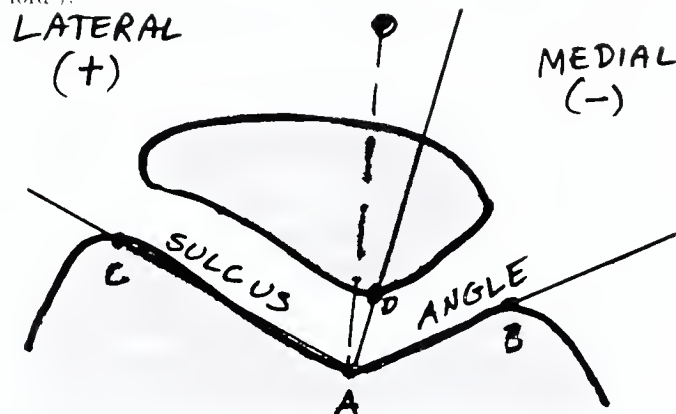


Figure 6. The Congruence Angle of Merchant.<sup>11</sup> The Sulcus Angle is bisected by a reference line. This is compared to the line projected upward from the sulcus to the lowest point on the patella.

The "angle of inclination" is difficult to measure in a single x-ray, due to rotation of the film, but when both knees are projected on the same film, a fairly accurate measurement can be obtained. The normal angle is 3.5 to 6.4 degrees.

Merchant<sup>14</sup> has described a measurement of "Patellofemoral Congruence Angle" by using a reference line to bisect the trochlear sulcus angle and projecting a line from the apex of the patella. The knee should be relaxed at 45 degrees when the x-ray is taken. The average here is minus 6 degrees (medial side) with a standard deviation of 11 degrees.

Laurin<sup>13</sup> described a very simple method of assessing patellar luxation (Fig. 7). A single line is drawn across the femoral ridges. A second line follows the lateral patellar facet. If these lines diverge laterally, the patella is considered normal. If the lines converge laterally, it is indicative of subluxation.

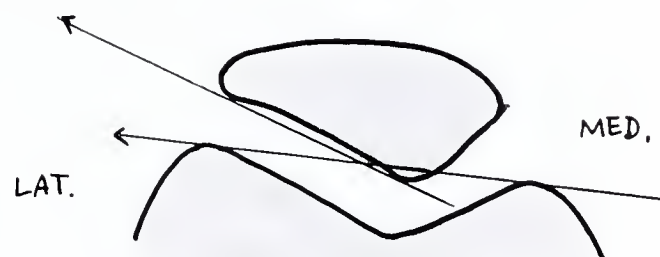


Figure 7. Laurin's Lines.



Wiberg,<sup>18</sup> in his classic article in 1941, sectioned frozen cadaver knees. He classified them into three types. Type III had a small hypoplastic, convex medial facet. This type has since been strongly implicated in recurrent dislocation and subluxation.

5. *Excess Lateral Pressure Syndrome (ELPS):*<sup>5</sup> In cases where the trochlea and the patella are not dysplastic, the alignment, ligaments, and muscles about the knee may be in poor balance, producing excessive pressure on lateral trochlear and patellar facets. Subluxation may not necessarily be present, but the medial facet bears no pressure and the patella tracts laterally on a continuous basis. This produces subtle, but characteristic, x-ray changes (Fig. 8). Early there is thickening of subchondral bone of the lateral facet. Bony trabeculae line up perpendicular to the lateral facet and atrophy and osteoporosis of the medial facet are seen. As time goes on, excessive lateral ligamentous tension may produce more changes (Fig. 9): calcification or fragmentation of bone beyond the lateral retinaculum; fibrosis and thickening of lateral retinaculum; lateral bony osteophytes, or a "spilling over" of bone beyond the lateral femoral trochlea. The medial facet appears even more hypoplastic. In the late stages, this appears as characteristic osteoarthritis of the lateral facet.

6. *Osteochondral Ridge:* Outerbridge<sup>15,16</sup> has described a bony ridge at its superior end of the

trochlea which he feels is responsible for chondromalacia. The patella must climb this high femoral ridge in the first few degrees of flexion producing injury to its under surface. This is, no doubt, an uncommon cause for chondromalacia.

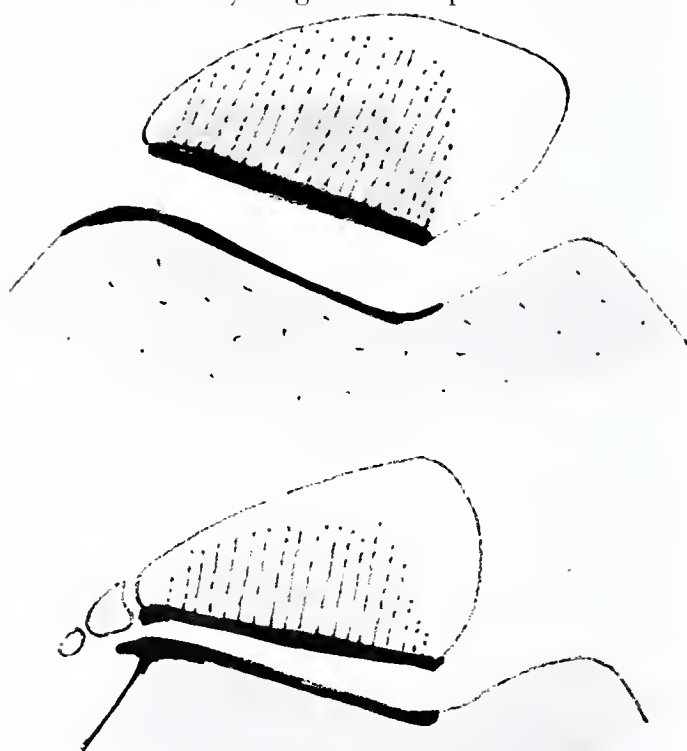
7. *Arthritis and Synovitis of Other Causes:* Rheumatoid arthritis, hemophilia, pigmented villonodular synovitis, alkaptonuria, gout, pseudo-gout, and sepsis all produce secondary injury to the cartilage of the patella as well as cartilaginous surfaces throughout the knee. Chondromalacia in these cases is a total joint disease.

### TREATMENT

The conservative management of chondromalacia is sometimes so simple that it is difficult to convince patients that it is effective. In all cases of chondromalacia, a good trial of conservative treatment is indicated initially. Surgery may later be necessary on dysplastic patellofemoral joints, but it is surprising that most patients respond to a good, conscientiously carried out, conservative program.

Quadriceps exercise is the cornerstone of conservative treatment. Strengthening of the vastus medialis adds to the medial restraint which counters the strong tendency for lateral patellar displacement. Strengthening the knee in the last few degrees of extension builds the vastus medialis. The proper technique for carrying out this exercise is extremely important. Knee extension against resistance through a full 90 degrees of motion is contraindicated. This produces a compression force on the patellofemoral joint much greater than the weight lifted (Fig. 10).

The knee should be bent to 20-30 degrees of flexion with the foot resting at the end of a table and a rolled up bolus pad under the knee. A weight is attached to the foot, beginning with approximately five pounds and isometric quad exercises are carried out as follows. From a position of 20 degrees flexion, the weight is lifted in full knee extension and held for a count of six. At the end of this count, the foot is allowed to return to the table and ten repetitions of six counts each follows. A short rest period is allowed and a second set of ten extensions is carried out. Following a second rest period, the third and last set is carried out with each extension being held for a total of six counts. These exercises are done only once a day. Therefore, 30 repetitions holding the knee in extension for a



Figures 8 and 9.  
Excessive Lateral Pressure Syndrome (modified from Ficat and Hungerford<sup>5</sup>).

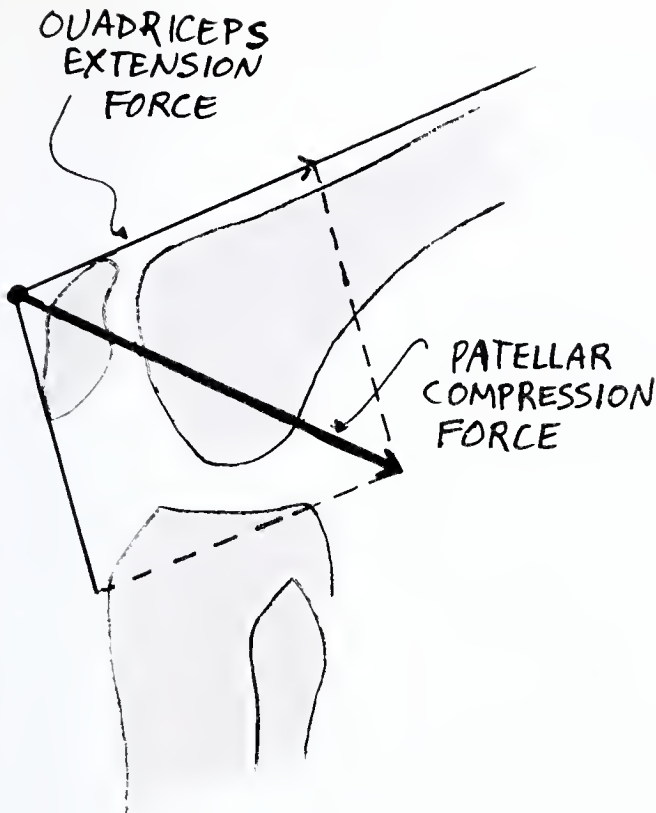


Figure 10.

count of six are carried out in three sets of ten. The weight attached to the foot can be in the form of a "weight shoe" with elaborate weights, or an old purse loaded with canned goods. The amount of weight should be titered to each patient's ability. That is, if ten repetitions per set are not possible before fatiguing the quadriceps, too much weight is being used. Conversely, if more than twelve repetitions are easily possible, not enough weight is being applied. As well as building the vastus medialis, these exercises have a "milking" effect on the joint, ridding it of fluid. After these exercises are done religiously over a period of several days and weeks, new activities previously impossible due to pain will be tolerated.

Aspirin is very effective in the treatment of cartilage disease, particularly around the patella. Chrisman,<sup>3</sup> in 1968, points out its benefit in arresting cartilage matrix degradation and allowing regeneration of cartilage. Aspirin has a definite anti-inflammatory and analgesic effect as well, so that aspirin represents the cheapest and most effective medication in this condition. When symptoms persist, aspirin should be taken on a regular basis, two tablets (10 gr.) three to four times daily.

Surgery for this condition has been varied in its reported results. Patellar shaving, drilling, chondrectomy, patella tendon realignment, lat-

eral retinacular release, Maquet transposition of the tibial tubercle, patellectomy, vastus medialis transfer, and patellar prosthesis all have their advocates and possible even indications. None, however, are indicated without first a conscientious trial of conservative management.

### SUMMARY

Chondromalacia patellae is an intriguing, fascinating, and still incompletely understood problem. It is a common disease process, but multifaceted in its etiology. The patella should be considered in any vague, non-descript pain occurring about the knee.

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## EDITORIAL

# Myasthenia Gravis and Immunity

Alfred Kahn, Jr., M.D.

The physiological investigations of Loewer and Cannon established a basis for understanding some of the more uncommon neuro-muscular diseases. The concept of chemically conveying the impulse from one nerve ending to another — and between nerve and muscles is well established. The further extension of this work is the current series of investigations on dopamine, nor-epinephrine, etc., in the brain — as a basis of understanding Parkinsonism, depression states, and many other poorly understood disorders of the brain.

The confluence of a group of medical advances has led to a much better understanding in a disease classified as neuromuscular — myasthenia gravis; progress in immunology and electro microscopy have provided some new insights.

In the March 25, 1976, issue of *The New England Journal of Medicine*, Mittag, Kornfield, Tormay and Woo published an article entitled "Detection of Anti-Acetylcholine Receptor Factors in Serum and Thymus From Patients With Myasthenia Gravis." They cite the fact that some type of circulating factor that interfered with synapses was suspected because of a myasthenic-like disease in rabbits produced by injections of purified acetylcholine receptor; this was verified and extended by others. Mittag, et al., studied patients to try and determine if there were anti-acetylcholine receptors in the serum and thymus. One group of 28 patients were tested by Sephadex and sarcolemma methods. The results were equivocal except in two patients whose serum seemed to have some interfering factor. A second group of patients with myasthenia gravis were studied using two other methods of serum and thymus testing — concanavalin technique and a precipitation technique using anti-human Ig G. rabbit serum. Using these last two techniques,

positive tests were found for anti-acetylcholine receptor factors. There appears to be more than one anti-receptor factor in the serum of myasthenic patients.

Richman, Patrick and Arnason have studied cellular immunity in myasthenia gravis (*New England Journal of Medicine*, Volume 294, page 694, March, 1976) in contradistinction to Mittag, et al., who studied serum factors. They point out that Alpha Bungarotoxin binds specifically to acetylcholine receptors in the subsynaptic area of muscle membrane; in the muscle of myasthenia gravis patients there is a decrease in binding of Bungarotoxin indicating a decrease in acetylcholine receptors. Furthermore, now animals can be induced to produce a myasthenic-like disease by immunization techniques. This led to the demonstration of antibodies to acetylcholine receptors. Antibodies were demonstrated in serum. Richman, et al., demonstrated a definite cell mediated immunity to acetylcholine in myasthenics. In males, they report that the level of degree of disease activity relates to the degree of cell mediated immune activity to acetylcholine receptors. They theorize that T cell dependent cellular immunity to acetylcholine receptors may destroy the subsynaptic apparatus. Myasthenia Gravis can be improved by decreasing the number of T type lymphocytes as in the thymectomy, etc. Based on immune studies the authors suggest Myasthenia Gravis may in reality be two diseases.

Engel, Lambers, and Howard (*Mayo Clinic Proceedings*, Volume 52, p. 267, May, 1977) correlated the ultrastructure of the synapse with electrophysiology in Myasthenia Gravis in an article entitled "Immune Complexes (IgG and C3) at the Motor End Plate in Myasthenia Gravis." Using their technique they report four findings:

the localization of IgG and C-3 at the motor end plate in Myasthenia Gravis gives "morphometric estimates of the abundance of immune complexes on the postsynaptic membrane in patients with Myasthenia Gravis correlate the morphometric data with miniature end-plate potential amplitude, and describe a new method for ultrastructural and light microscopic localization of IgG with peroxidase-labeled staphylococcal protein A." "The study demonstrates unambiguously localized IgG and C-3 at the motor end plate and provides evidence for a destructive auto-immune reaction involving the post synaptic membrane in Myasthenia Gravis," state Engel, et al. There

further appears to be a reciprocal relationship between the number of immune complexes on the end plate and the severity of the disease; there were more immune complexes in the milder cases because of smaller amounts of acetylcholine receptor protein left in severe cases. They also state that "the length of postsynaptic membrane that bound immune complexes was proportionate to the miniature end plate potential amplitude." The authors have excellent illustrations demonstrating localization of IgG and C-3.

These studies clearly show that Myasthenia Gravis is another auto-immune disease — and thus indicate some leads for study — for treatment.



## MEDICINE IN THE



### THE MONTH IN WASHINGTON

The Carter Administration's legislative proposal to place an arbitrary cap on hospital costs is floundering about in the Congress despite extreme pressure on the part of White House and Health, Education and Welfare Department lobbyists to put it back on the track. Top officials have publicly conceded that the President's bellweather anti-inflation proposal aimed at the guts of the nation's health care system may well be doomed.

The President has said that "he has not given up as far as getting the hospital cost containment measure implemented by congressional action," admitting, however, that "—the lobbying pressure on the members of Congress by the hospital lobby is extraordinary —."

Five months into the congressional session, the top priority bill has advanced through two subcommittees, but through none of the four full committees that have jurisdiction. The only committee "safe" for passage is the Senate Human Resources Committee where Sen. Edward Kennedy (D.-Mass.) usually gets his way on health legislation.

Although the Health Subcommittee of the House Ways and Means Committee has adopted the measure, the situation in the full committee is "touch and go." Chairman Al Ullman (D.-Ore.), a supporter of the bill, wanted a vote but was forced to postpone a showdown indefinitely because there were not enough votes to assure approval.

On the other House Health Panel — Interstate and Foreign Commerce — the Health Subcommittee headed by Rep. Henry Waxman (D.-Calif.) appears to be stacked against the bill despite Waxman's support. The situation in the two committees caused House Speaker Thomas P. O'Neill (D.-Mass.) to put off his deadline for floor action on the measure from July to September.

The Senate Finance Committee is planning an important series of meetings at which the fate of the hospital bill may be settled. The Committee traditionally has favored another approach to hospital cost containment, a bill by Sen. Herman Talmadge (D.-Ga.), that would reshape the way hospitals are reimbursed for Medicare and Medicaid by emphasizing prospective



payments and gearing payments to reward efficient institutions. At the same time, the Committee may take up the catastrophic national health insurance bills introduced by Chairman Russell Long (D-La.), Sen. Robert Dole (R-Kans.) and others. Both Long and Talmadge have been vehement in the past in their criticism of the Administration's approach on hospital cost containment.

The only strong voice for the Administration's hospital bill has come from the Administration. Labor has been lukewarm in its backing. Countering White House pressure has been the urgent protests of hospitals and physicians from every congressional district against the Administration plan. Congress, long hostile to wage and price controls, is not convinced there would be the price savings the Administration claims.

The bill approved 7-3 by Sen. Kennedy's Health Subcommittee proposes a new ceiling of 10.9 percent, instead of 9.7 percent proposed originally for hospital revenue increases.

\* \* \* \*

The Senate has passed by voice vote the "Health Planning Amendments of 1979," extending the health planning program for three years.

The measure is similar to the bill which passed the Senate last year with one exception. A major change drops the old bill's controversial extension of certificate of need requirement for medical equipment on physician's offices valued at more than \$150,000. The new bill exempts major medical equipment from health planning certificate of need requirements if the equipment is not to be owned or located in a health care facility. Notice of purchase of such equipment to the state planning agency would be required, however, and the exempt equipment could not be used "to provide services on a regular basis for in-patients of a hospital."

The Senate bill authorizes \$256 million over three years to finance health planning activities.

On the House side the bill has cleared committee but has not come to the floor.

\* \* \* \*

With his usual three-ring-circus style, Sen. Edward Kennedy has put forward a \$30 billion national health insurance proposal that he conceded faces an "uphill" battle in Congress.

Unable to heal the policy breach with the Administration after more than a year of trying,

Kennedy and Labor were forced to go it alone. Their bill, a drastically cut-back version of Labor's original plan nine years ago, would provide everyone an "all bills paid" health policy but would rely chiefly on private health insurance premiums to finance the program.

The break with President Carter is on the crucial strategic question of whether Congress should be asked to approve NHI as a complete package, or in phases. Kennedy wants the plan adopted in one great swoop though there would be a four-year phase-in. Carter insists on a step-by-step approach, seeking congressional approval first of a relatively modest initial step.

The way the NHI picture now shapes up in Congress, Kennedy's bill stands on the left as by far the most sweeping. The Administration's still to be introduced measure, looking toward a comprehensive program down the road, is in the middle. A formidable threat to both is the much cheaper catastrophic benefit plan advanced from the stronghold of the Senate Finance Committee. But an even more formidable threat to all plans is the pinch-penny sentiment in the Congress.

Kennedy disclosed his latest NHI plan at a crowded news conference in the spacious Caucus Room filled with newsmen and representatives of the 64 organizations that have long formed a coalition supporting his health legislation.

Attending the news conference at Kennedy's side was Rep. Henry Waxman (D-Calif.), Chairman of the House Commerce Subcommittee on Health, who has agreed to sponsor the bill in the House.

Other lawmakers lining up with Kennedy were: Sens. Harrison Williams (D-N.J.), Claiborne Pell (D-R.I.), Howard Metzenbaum (D-Ohio), Don Reigle (D-Mich.), Alan Cranston (D-Calif.), Jacob Javits (R-N.Y.), and Lowell Weicker (R-Conn.). Representatives on hand were Reps. William Brodhead (D-Mich.), Mickey Leland (D-Texas), Andrew Maguire (D-N.J.), and James Shannon (D-Mass.).

Under the Kennedy-Labor plan, all people would be covered by health insurance plans with federal financing of coverage for the poor and the aged. A health insurance card would be issued everyone.

The benefits would cover virtually all hospital and physician charges without deductibles or co-insurance.

Prospective budgeting of hospital and negotiated fee schedules for doctors would be the principal method of cost control. Hospitals and physicians would be paid on the basis of pre-negotiated amounts and there could be no added charges.

The program would be administered by a National Health Insurance Board appointed by the President. A majority would be consumer representatives.

Insurers must be a member of a consortium of insurance companies, Blue Cross-Blue Shield Plans, Health Maintenance Organizations, or Independent Practice Associations.

Medicare would be upgraded. Prescription drugs would be covered for the elderly. Medicaid would be reformed.

Employers would pay a premium related to total wages, meaning employers paying high wages would pay more for health insurance than employers paying low wages. Business would have to pay at least 65 percent of the cost of premiums.

The American Medical Association immediately blasted the Kennedy plan. "Rationing of health care services, new federal regulation and huge new costs would be the inevitable result of Senator Kennedy's latest proposal on health insurance," said James H. Sammons, M.D., Association Executive Vice President. "The AMA continues to believe that consumer choice, private insurance and limited government regulation should be at the heart of our health care system," Sammons indicated.

"The Kennedy program while talking about private sector involvement continues to build government regulation. Under the proposal it appears that the insurance companies would be little more than administrators for the plan.

"Senator Kennedy's proposal ignores the current realities of the U. S. economy and long-range forecasts for continuing inflation by calling for costs of nearly \$30 billion per year eventually.

"The AMA continues to support an expansion of adequate basic and catastrophic insurance through private sector programs."

\* \* \* \*

The Federal Trade Commission staff, carrying on its Holy War against the medical profession, has proposed that physician membership on Blue Shield boards be slashed back. After a three-year

study, the staff concluded that physician control of local Blue Shield boards may violate the anti-trust laws and boost medical costs.

A long legal and procedural process lies ahead before any formal governmental action is possible. The rule-making proceeding recommended by the staff, which must be approved by the FTC, would be the first such action by the FTC in an antitrust issue.

Walter McNerney, President of the Blue Cross and Blue Shield Associations, said the FTC's proposed regulation is "unnecessarily costly to America's taxpayers, potentially harmful to Blue Shield subscribers and factually unsupportable."

The FTC staff claimed in a 409-page report that physicians control decision concerning payment to physicians, and coverage or benefits, in most of the nation's 70 Blue Shield plans. As of 1978, physician organizations selected the majority of members of the governing boards of 32 plans, and physician-controlled committees supervised or participated in decisions about payments and claims in 67 plans.

The staff concluded that some forms of medical participation in control of Blue Shield and other plans may be illegal as violations of the antitrust laws or as unfair conflicts of interest.

"Medical control of a plan means that physician organizations set or strongly influence the prices that their members will be paid by the plan," the report says.

"The structural relationship that exists between physician organizations and most Blue Shield plans raises inherent antitrust conflict-of-interest problems that have manifested themselves in numerous specific instances when the medical profession's interests have prevailed over subscribers' interests in the making of Blue Shield policy," the report continued.

The staff's draft rule declares it an unfair method of competition for any physician organization directly or indirectly to participate in controlling any open-panel medical prepayment plan.

The proposed rule bars anyone from serving on the governing body of an open-panel plan as a representative of a physician organization and prohibits plans from permitting such representatives to serve on their governing bodies.

Individual physicians who compete in providing services covered by a plan could not compose



more than 25 percent of the plan's governing body, regardless of whether they represent a physician organization.

"Although we cannot at this time calculate the cost savings that would result from the rule, we believe that they would be substantial," the staff said.

\* \* \* \*

The Administration has opened an expanded attack on alcoholism with \$22 million for training, prevention and treatment.

"The major new Administration initiative" was announced by HEW Secretary Joseph Califano in a speech before the National Council on Alcoholism.

Expressing President Carter's commitment, Califano said, "it is time to prove to the American people that alcoholism is not only a treatable disease, but a beatable disease."

"The veil of shame and denial that once hung over the disease of alcoholism is lifting," said Califano. "More and more courageous Americans — from Betty Ford to Wilbur Mills to Harold Hughes — are standing up and saying, 'I have suffered from this disease, and I am recovering.'"

HEW plans to focus special attention on an alcohol problem of teenagers, women, and pregnant women.

\* \* \* \*

Sen. Abraham Ribicoff (D.-Conn.), a major power in health for almost two decades, has announced he will retire at the end of the current congressional session. Ribicoff served as Secretary of the HEW Department under President Kennedy. As a member of the Health Subcommittee of the Senate Finance Committee, Ribicoff has played an active part in shaping health legislation. He has joined with Senate Finance Committee Chairman Russell Long for several years in sponsoring a catastrophic benefit approach to national health insurance.

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Hale Champion is resigning as number two man at HEW. The Undersecretary is returning to Harvard University where he served as financial vice president before coming to HEW in March, 1977. One of the reasons behind Champion's departure is a new series of government regulations that might have made it diffi-

cult for him to take a private post that involved dealing with his old agency.

HEW Secretary Joseph Califano last year wanted to make Champion Social Security Administrator, but the White House nixed the deal. Current Social Security Chief Stanford Ross, Califano's candidate at the time for the undersecretaryship, may get it this time around.

\* \* \* \*

Lewis A. Engman, a former chairman of the Federal Trade Commission, will become president of the Pharmaceutical Manufacturers Association on July 1. He succeeds C. Joseph Stetler, who retires after 14 years as head of the PMA.

Engman, 43, was FTC chairman from 1973 to 1976. Prior to that he had served on the President's Commission on Consumer Interests, the Office of Consumer Affairs, and the Domestic Council.

A native of Grand Rapids, Michigan, Engman was graduated from the University of Michigan in 1957. He took a year of post-graduate study at the London School of Economics and received his law degree from Harvard University in 1961.

\* \* \* \*



#### ANSWER—Electrocardiogram of the Month

**DISCUSSION:** The ECG shows complete left bundle branch block with the QRS duration exceeding 0.12 seconds along with slurring of the R-wave in lead I, delayed intrinsicoid deflection in the left precordial leads, absence of septal Q-waves in the left precordial leads, and with absent R-waves in V1 and V2. The patient's questions thus relate to the prognosis of newly acquired left bundle branch block.

Only 11% of patients with this change remain free of clinical abnormalities for 18 years and 48% will develop clinical coronary disease or CHF. Fifty percent of patients with newly acquired LBBB will expire within 10 years. Newly acquired LBBB occurs most often in patients with prior hypertension, cardiomegaly, or coronary heart disease. Thus A and C are false and B is true.

**REFERENCE:** Schneider, J. F., et al.: Newly acquired left bundle branch block: The Framingham study. *Annals of Internal Medicine* 90:303-310, March 1979.

# keeping up

## Category 1 Continuing Medical Education Programs Available in Arkansas

### TWO DAYS OF INTERNAL MEDICINE

Presented by Dr. George L. Ackerman, *September 7 and 8, 1979*, Arkansas State Hospital Auditorium, 4313 West Markham, Little Rock. Twelve hours Category I credit and twelve hours Prescribed AAFP credit. \$100 registration fee includes luncheon (both dates) and social hour and dinner, Little Rock Country Club on September 7th.

### ADOLESCENT MEDICINE AND ENDOCRINOLOGY

*September 14, 1979, 8:00 a.m. to 4:30 p.m.*, Room E-155, Education Wing, St. Vincent Infirmary, Little Rock. Seven hours Category I credit. Registration fee \$25.

### ANESTHESIOLOGY UPDATE

Presented by Drs. Noel W. Lawson and Dola S. Thompson, *September 15, 1979, 8:00 a.m. to 3:00 p.m.*, Little Rock Hilton Inn. Six hours Category I credit. \$40 registration fee includes luncheon.

### LEGAL RADIOLOGY UPDATE

Presented by Dr. E. J. Ferris, *September 15th, 1:00 p.m. to 4:00 p.m.*, and *September 16th, 9:00 a.m. to 2:00 p.m.*, Little Rock Hilton Inn. Seven hours Category I credit. \$60 registration fee includes luncheon for registrants and families.

### AGING AND THE LUNG

Presented by Drs. Joseph H. Bates, Richard V. Egert, and Roger Bone, *September 24th, 8:00 a.m. to 4:45 p.m.* (social hour 5:30 p.m., Little Rock Hilton Inn), and *September 25th, 8:30 a.m. to 12:00 noon*. Arkansas State Hospital Auditorium, 4313 West Markham, Little Rock. Nine hours Category I credit. Registration fee \$50 (\$20 for VA sponsored physicians) includes luncheon on September 24th.

### ALLOCATION OF HEALTH RESOURCES FOR THE AGED

Presented by Drs. Robert Morris and Eugene J. Towbin, *September 27th, 9:00 a.m. to 5:00 p.m.* (social hour and dinner 7:00-9:00 p.m.), and *September 28, 9:00 a.m. to 12:00 noon*. Little Rock Hilton Inn. Ten hours Category I credit. \$65 registration fee includes luncheon and dinner.

### MEETING OF THE ARKANSAS OPHTHALMOLOGICAL SOCIETY

*September 28th and 29th, 9:00 a.m.*, Red Apple Inn, Heber Springs. Program presented by Dr. Howard L. Beale of Memphis, Tennessee, and Dr. John P. Shock of San Antonio, Texas. Seven and one-half hours Category I credit. Registration fee \$40 for AOS members and \$60 for non-members.

### RECURRING EDUCATION PROGRAMS

Unless otherwise indicated, programs are for one to one and one-half hours Category I credit.

*INTERHOSPITAL GI PROBLEMS CONFERENCE*, First Monday of each month, 6:00 p.m., St. Vincent Infirmary, Little Rock.

*PERIPHERAL VASCULAR DISEASE CONFERENCE*, Second Monday of each month, 6:00 p.m., St. Vincent Infirmary, Little Rock.

*INTERHOSPITAL UROLOGY GRAND ROUNDS*, First Tuesday of each month, 5:30 p.m., St. Vincent Infirmary, Little Rock.

*INTERESTING CASES*, Second and Fourth Tuesday of each month, 11:50 a.m., St. Bernard's Regional Medical Center, Jonesboro.

*TUMOR CONFERENCE*, Third Tuesday of each month, 11:50 a.m., St. Bernard's Regional Medical Center, Jonesboro.

*NEUROPATHOLOGY CONFERENCE*, Third Tuesday of each month, 5:00 p.m., St. Vincent Infirmary, Little Rock.

*MEDICAL GRAND ROUNDS*, Each Thursday, 8:00 a.m. to 9:00 a.m., UAMS Auditorium, Education I Building, Little Rock.

*PULMONARY CONFERENCE*, First and Third Thursday of each month, 12:00 noon, St. Vincent Infirmary.

*MEDICAL LECTURE SERIES*, First, Second, and Fourth Friday of each month, 11:50 a.m., St. Bernard's Regional Medical Center, Jonesboro.

*MONTHLY MEDICAL LECTURE*, 7:30 p.m., September 18, 1979, Pocahontas.

*CLEFT PALATE CONFERENCE*, September 19, 1979, and November 21, 1979, 12:30 p.m., St. Vincent Infirmary, Little Rock.

*CHEST CONFERENCE*, 11:50 a.m., September 21, 1979, St. Bernard's Regional Medical Center, Jonesboro.

As organizations accredited for continuing medical education by the Liaison Committee on Continuing Medical Education, the organizations named certify that these continuing medical education activities meet the criteria for the credit hours specified in Category I of the Physician's Recognition Award of the American Medical Association.





## PERSONAL AND NEWS ITEMS

### DOCTOR GETS APPOINTMENT

Dr. Durwood Wisdom of Jonesboro has been appointed to serve on the governing board of St. Bernard's Regional Medical Center.

### PHYSICIANS LOCATE

Dr. Stan Burleson has opened an office in the DeWitt Medical Center for family practice.

Dr. Michael Lack has located in Corning. Dr. Lack recently completed his family practice residency training at the Area Health Education Center in Pine Bluff.

Dr. E. C. ("Kit") Moulton, III, will be joining the Ophthalmology Clinic at Fort Smith in August. His father is the senior partner in the clinic and his grandfather practiced Ophthalmology in Fort Smith.

### DOCTOR NAMED FELLOW

Dr. Michael L. Hawkins of Mountain Home received a Fellowship certificate at the Southwestern Surgical Congress in Las Vegas in April.

### DOCTORS ARTHRITIS SEMINAR

Dr. Don Leonard of Little Rock and Dr. E. V. Dildy of Nashville recently participated in an Arthritis Action Seminar in Nashville.

### RECEPTION HONORS PHYSICIAN

Dr. Matt Baltz of Pocahontas was honored for his fifty years of medical practice with a public reception on June 28th. The reception was hosted by the Randolph County Memorial Hospital and Home.

### DOCTOR SPEAKS TO ROTARIANS

Dr. James Moffat of Jonesboro recently addressed the Jonesboro Rotary Club on the "Problems of Obesity."

### DOCTOR APPOINTED TO BOARD

Dr. Bob Gosser of North Little Rock has been appointed to the Board of Governors of Arkansas Children's Hospital.

### PHYSICIAN SPEAKS

Dr. K. W. Cosgrove, Jr., of Little Rock recently spoke before the Lions Club of Little Rock on "Effects of Diabetes on the Eyes."

### DOCTOR ON TASK FORCE

Governor Bill Clinton has appointed Dr. Glenn Dalrymple of Little Rock to the Nuclear Energy Study Task Force.

### DOCTORS ADDRESS SEMINAR

Dr. J. Malcolm Moore of Little Rock spoke on the "Urological Aspects of Multiple Sclerosis" during a recent seminar at the Baptist Medical Center in Little Rock. Dr. John G. Watkins, also of Little Rock, discussed "Ophthalmology and Multiple Sclerosis."

### PHYSICIANS RECEIVE RECOGNITION

Dr. Richard Kuharich of Harrison was recently elected a member of the Oculoplastic Fellowship Society of New York.

Dr. William D. McKnight of Rogers was elected a Fellow of the American College of Physicians at the annual meeting of the organization in San Francisco earlier this year.

### DR. SALTZMAN ELECTED

Dr. Ben Saltzman of Little Rock was elected President of the Board of Directors of the Arkansas Endowment for the Humanities. The twenty-one-member panel reviews grant applications for the State affiliate of the National Endowment for the Humanities.

### HOSPITAL STAFF OFFICERS

Dr. Thomas Simpson has been elected Chief of Staff at the Boone County Hospital for 1979. Dr. Donald Butts is Vice Chief.

### PHYSICIANS LOCATE

Dr. Landers Smith has joined the Banister-Lieblong Clinic in Conway. Dr. Smith is a 1977 graduate of the University of Arkansas College of Medicine and a general practitioner.

Dr. Stephen Parker has affiliated with the Meador-Feild Clinic in Fort Smith. Dr. Parker is a native of Fort Smith and a graduate of the University of Arkansas College of Medicine. He recently completed a residency in Internal Medicine at Tulsa Medical College.

# THINGS TO COME

## ARKANSAS RURAL HEALTH CONFERENCE

"Rural Health Care for an Aging Population" is the theme of the Arkansas Rural Health Conference being held August 22, 1979, at the Camelot Inn, Little Rock.

The program outline is as follows:

- 9:30 a.m. Opening Remarks, Jack Justus, Arkansas Farm Bureau, Moderator.
- 9:40 a.m. "Setting the Theme," Dean Thomas A. Bruce, University of Arkansas College of Medicine.
- 9:55 a.m. "The Aged: What is Health?," Owen W. Beard, Head of the Division of Geriatric Medicine, University of Arkansas College of Medicine.
- 10:25 a.m. Panel — "Keeping Healthy,"  
Dr. Beard, Moderator.  
"Dental," Wharton A. Nichols, D.D.S.,  
Director of Dental Services Division  
of the Arkansas Department of  
Health.  
"Drug Interactions," Lawrence A.  
Robinson, Ph.D., Assistant Profes-  
sor of Clinical Pharmacy, Univer-  
sity of Arkansas for Medical Sci-  
ences.  
"Nutrition," Marjorie M. Phillips,  
Nutrition Specialist, University of  
Arkansas Cooperative Extension  
Service.  
"Mental Health," David Williams,  
Ph.D., Ozark Guidance Center  
Fayetteville.
- 11:55 a.m. Luncheon, Roger M. Busfield, Jr.,  
Ph.D., Moderator.
- 1:30 p.m. Afternoon Session — moderated by  
Ben N. Saltzman, M.D., Director,  
Rural Medical Development Pro-  
grams, University of Arkansas College  
of Medicine.
- 1:35 p.m. "Rural Health Services for the El-  
derly," Robert W. Young, M.D., Di-  
rector, Arkansas Department of  
Health.
- 2:05 p.m. Panel — "Highlight Resources,"  
Dr. Young, Moderator.

"Transportation and Emergencies,"  
John A. Eason, Administrator, Lee  
County Cooperative Clinic, Mari-  
anna.

"County Health Programs," Betty  
Thomas, R.N., Director of Nursing  
Services Division, Arkansas Depart-  
ment of Health.

"State Social Services," Gail S.  
Huecker, Director, Arkansas De-  
partment of Human Services.

"Long Term Care and Recreational,"  
Betty King, Director, Office on  
Aging, Arkansas Department of Hu-  
man Services.

## CANCER OF THE BREAST SYMPOSIUM

Hillcrest Medical Center, in affiliation with the University of Oklahoma and Tulsa Medical College, will present a symposium on "Cancer of the Breast: Controversy in Initial Management," September 8, 1979, at the Williams Plaza Hotel, Tulsa, Oklahoma. For registration information contact Hillcrest Medical Center, 1120 South Utica, Tulsa, Oklahoma 74104. Phone: (918) 584-1351, Ext. 5227.

## REVIEW OF SPACE MEDICINE

The Aerospace Medical Association, American College of Preventive Medicine and the Lyndon B. Johnson Space Center in Houston are sponsoring a "Review of Space Medicine," September 28-29, 1979, at the Flagship Hotel, 2501 Seawall Boulevard, Galveston, Texas. Category I credit will be offered on an hour-for-hour basis. The registration fee for physicians is \$50. For further information contact: Course Coordinator, Michael A. Berry, M.D., Mail Code SD24, NASA, Johnson Space Center, Houston, Texas 77058. Phone: (713) 483-4021.

## UPDATE ON OBSTETRICS AND GYNECOLOGY FOR FAMILY AND GENERAL PRACTITIONERS

Baylor College of Medicine announces a course "Update on Obstetrics and Gynecology for Family Practitioners" on November 1-2, 1979, at the Stouffer's Greenway Plaza Hotel, Houston, Texas. This course meets the criteria for 16 credit hours in Category I, and is acceptable for 16 prescribed hours by the American Academy of Family Physicians. Registration fee for physicians is \$175. For further information contact: Office of Continuing Education, Baylor College of Medicine, Texas Medical Center, Houston, Texas 77030. Phone: (713) 790-4941.



### CONTINUING EDUCATION COURSES

The Office of Continuing Education, Baylor College of Medicine, announces the following courses:

Comprehensive Update in Infectious Diseases in Obstetrics and Gynecology (September 7-8, 1979).

Ovulation: Principles and Pathophysiology of Induction (September 12, 1979).

Second Annual Comprehensive Review in Obstetrics and Gynecology (October 26-31, 1979).

Introductory and Intermediate Hypotherapy (November 16-17, 1979).

Phenomenology and Treatment of Psychophysiological Disorders (November 29-30, 1979).



## NEW MEMBERS

The Pulaski County Medical Society has four new members:

### DR. DALE FULLER

Dr. Dale Fuller is a native of Little Rock, Arkansas. He was graduated from the University of Arkansas at Little Rock in 1971. Dr. Fuller received his medical degree in 1975 from the University of Arkansas College of Medicine. He interned at the University of Arkansas College of Medicine and completed a residency in Obstetrics and Gynecology at the same institution.

Dr. Fuller is in the practice of Obstetrics and Gynecology at the Highland Park Medical Building, Fendley and Falling Creek, North Little Rock.

### DR. GERALD R. SILVOSO

Dr. Gerald R. Silvoso was born in Carrollton, Missouri. He received a B.A. degree in Zoology in 1970 from the University of Missouri at Columbia. Dr. Silvoso attended Washington University School of Medicine, St. Louis, receiving his M.D. degree in 1974. He interned at the University of Missouri Medical Center at Columbia, where he also completed residencies in Internal Medicine and Gastroenterology.

Dr. Silvoso is board certified in Internal Medicine. He is in the practice of Internal Medicine

and Gastroenterology at the Little Rock Diagnostic Clinic, 10001 Lile Drive.

### DR. PHILLIP J. PETERS

Dr. Phillip J. Peters is a native of Columbus, Ohio. He was graduated from Harvard University in 1967 with a B.A. degree. In 1971, Dr. Peters received his medical degree from West Virginia University School of Medicine, Morgantown, West Virginia. He received internship training from West Virginia University Medical Center. Dr. Peters completed a residency in Internal Medicine in 1976 and a fellowship in Endocrinology and Metabolism in 1978, also at West Virginia Medical Center.

Dr. Peters was an assistant professor at West Virginia University School of Medicine. He is a member of the American College of Physicians and the American Diabetes Association.

Dr. Peters is board certified in Internal Medicine. He is located in the Little Rock Diagnostic Clinic for the practice of Internal Medicine, Endocrinology and Metabolism.

### DR. HOWELL V. HILL

Dr. Howell V. Hill was born in Little Rock. He received a B.A. degree in 1972 from the University of Arkansas, Fayetteville. Dr. Hill then attended the University of Arkansas College of Medicine, receiving his M.D. degree in 1976. He interned at the University Hospital, Louisiana State University, Shreveport, Louisiana, and completed a residency in Anesthesiology at the same institution.

Dr. Hill is a member of the Southern Medical Association, American Society of Anesthesiologists, the American Society of Regional Anesthesiologists, and the International Anesthesia Research Society. He is an Anesthesiologist with

offices at 1150 Medical Towers Building in Little Rock.

\* \* \* \*

#### DR. JOHN G. SCOTT

The Independence County Medical Society has added Dr. John G. Scott to its membership roll. Dr. Scott's hometown is Greenville, Mississippi. He attended Duke University for his pre-medical education, receiving a B.A. degree in 1970 and a Ph.D. in 1975. Dr. Scott received his M.D. degree in 1976. He completed a residency in Family Practice at the Medical University of South Carolina. He is a member of the American Academy of Family Practice.

Dr. Scott is in Family Practice at the White River Medical Arts Building, 17th and Harrison Streets, Batesville.

#### DR. W. R. KENDRICK

Dr. W. R. Kendrick is a new member of the Crittenden County Medical Society. A native of Lufkin, Texas, Dr. Kendrick attended Arkansas Polytechnic College for his pre-medical education. He received his M.D. degree in 1969 from the University of Arkansas School of Medicine. Dr. Kendrick interned at the Naval Hospital in St. Albans, New York, and completed a residency in Anesthesiology in 1972 at Bethesda Naval Hospital. Dr. Kendrick served at Millington Naval Hospital from 1972 to 1975. Before coming to Arkansas he practiced in Memphis. Dr. Kendrick was head of the Anesthesiology Department at both Millington Naval Hospital and St. Joseph's Hospital in Memphis.

Dr. Kendrick is a member of the American Society of Anesthesiologists, the American Society of Regional Anesthesiologists, and the International Anesthesia Research Society.

Dr. Kendrick is a board certified Anesthesiologist at Crittenden Memorial Hospital, West Memphis.

#### NEW MEMBERS

Pulaski County Medical Society has added three courtesy members to its roll. They are:

Dr. Pham Hieu Liem, Family Practice Resident;

Dr. Wade L. Lowry, Intern;

Dr. Justin L. Shields, Dermatology Resident.

All three are at the University of Arkansas for Medical Sciences.

#### DR. EUGENE WATERMANN

Dr. Eugene Watermann is a new member of the Garland County Medical Society. He is a native of that city.

Dr. Watermann's pre-medical education was at Hendrix College, Conway, and Southern Methodist University, Dallas. He was graduated from the University of Texas Southwestern Medical School in 1951. Dr. Watermann then interned at Parkland Hospital in Dallas and had training in Internal Medicine at Parkland in 1954-55.

Dr. Watermann served as General Medical Officer with the United States Navy at the United States Naval Academy, Annapolis, from 1955-1957. From 1957 to 1959, he was in residency training in Psychiatry at Spring Grove Hospital in Catonsville, Maryland. He had further training in Psychiatry at the Psychiatric Institute in Baltimore 1959-60. He was then in private practice in Baltimore for eight years and in Washington for eight years. He was a lecturer at the University of Maryland School of Social Work in 1968-69. Dr. Watermann served in 1960-61 as Assistant Director of the Child Guidance Clinic of the Psychiatric Institute in Baltimore, Psychiatrist-Director of the Middle River Mental Health Clinic in Baltimore 1961-64, Psychiatrist-Director of the Randallstown Mental Health Clinic in Baltimore 1963-66, and consultant to the Montrose Training School for Girls in Baltimore, the Boys' Home Society in Baltimore, the Springfield State Hospital in Sykesville, and the Northern Mental Health Institute in Fall Church. He is a member of the American Psychiatric Association, American Orthopsychiatric Association, and the American Academy of Psychotherapists.

Dr. Watermann's address is 124 Rugg Street, Hot Springs 71901, the Ouachita Regional Counseling and Mental Health Center.

#### DR. STEPHEN DeCOSTA HOLT

Dr. Stephen DeCosta Holt has also recently been added to the membership roll of the Pulaski County Medical Society. He is a native of Texas and attended Austin College at Sherman, Texas, for his pre-medical education. In 1973, he received his M.D. degree from the University of Texas Medical Branch at Galveston. Dr. Holt interned at Duke University Medical Center in Durham, North Carolina. He had residencies in Internal Medicine at the University of Texas Medical Branch in Galveston and in Rheuma-



## NEW MEMBERS

tology at the University of Missouri Medical Center in Columbia. He is a Diplomate of the American Board of Internal Medicine and a member of the American College of Physicians.

Dr. Holt is associated with the Little Rock Diagnostic Clinic at 10001 Lile Drive in Little Rock in the practice of Internal Medicine and Rheumatology.



## O B I T U A R Y

### DR. PAUL T. STROUD

Dr. Paul T. Stroud of Jonesboro died April 29, 1979. He was born on July 28, 1911.

Dr. Stroud attended Texas Christian University for his pre-medical education and received his medical degree from Johns Hopkins Medical School. He interned at St. Joseph's Mercy Hospital in Detroit. Dr. Stroud practiced in Jonesboro for thirty-seven years prior to retirement in 1975.

Dr. Stroud was co-founder of the Stroud Clinic in Jonesboro and held many positions at St. Bernard's Regional Medical Center. He was a past president of the Craighead-Poinsett County Medical Society. Dr. Stroud was a member of

the Southwest Surgical Congress and a Fellow of the American College of Surgeons.

Dr. Stroud was a Navy veteran of World War II. He had served on the Board of Directors of Citizens Federal Savings and Loan Association and of the Citizen's Bank. He was a member of the Rotary Club, Elks Lodge, Big Creek Hunting Club, and was a trustee of First Christian Church.

Dr. Stroud is survived by his wife, Mrs. Alma Ashabranner Stroud.

### DR. WALTER G. KLUGH, SR.

Dr. Walter G. Klugh, Sr., died June 13, 1979. Dr. Klugh was born on July 18, 1895.

Dr. Klugh was graduated from Wofford College, Spartanburg, South Carolina. His medical degree was received from Jefferson Medical College at Philadelphia in 1918. He interned at Allegheny General Hospital in Pittsburgh. Dr. Klugh practiced in Hot Springs from 1919 to 1972, when he retired. He was a member of the Fifty Year Club of the Arkansas Medical Society.

Survivors include his wife, Mrs. Dorothy D. Klugh, and a son, Dr. Walter G. Klugh, Jr., of Hot Springs.



September, 1979

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**Contraindicated:** Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.

**Warnings:** Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms (similar to those with barbiturates and alcohol) have occurred following abrupt discontinuance (convulsions, tremor, abdominal and muscle cramps, vomiting and sweating). Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

**Usage in Pregnancy:** Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

**Precautions:** If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed; drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

**Side Effects:** Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

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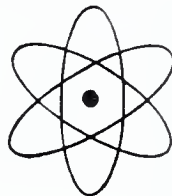
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**SCIENTIFIC ARTICLES**

The National Registry of Drug-Induced Ocular Side Effects and Toxic Drug Effects on the Retina	159
<i>R. Sloan Wilson, M.D., F. T. Fraunfelder, M.D., and James H. Landers, M.D.</i>	

Amebic Meningoencephalitis in Arkansas	164
<i>Terry Yamauchi, M.D., Jorge F. Jimenez, M.D., Tom W. McKee, M.D., Arthur R. Euler, M.D., and Paul C. White, M.D.</i>	

Grand Rounds: "Myxedema and the Heart"	169
<i>William J. Carter, M.D., David L. Vesely, M.D., Louis L. Sanders, M.D., Fred H. Faas, M.D., and Peter O. Kohler, M.D.</i>	

**FEATURES**

ECG of the Month	176
Public Health At A Glance: "School Hearing and Vision Screening — Referrals"	177
<i>Ray Clinton</i>	
Editorial: "More on High Blood Pressure"	179
<i>Alfred Kahn, Jr., M.D.</i>	
Medicine in the News	180
Council Minutes	185
Keeping Up	187
Personal and News Items	188
New Members	189
Things to Come	192

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# The National Registry of Drug-Induced Ocular Side Effects and Toxic Drug Effects on the Retina\*

R. Sloan Wilson, M.D.\*\*\*, F. T. Fraunfelder, M.D.\*\*\*, and James H. Landers, M.D.\*\*

## INTRODUCTION

The risks inherent with drug administration and drug toxicity are always present and should never be taken lightly. The issue is enormous in scope and immensely complex.

To some extent and in varying degrees and combinations, drug administration usually involves: (1) chemical reactions, (2) biological interactions, (3) dosage, (4) duration, (5) genetic predisposition, (6) allergic phenomena and (7) individual idiosyncrasy, etc.

## NATIONAL DRUG REGISTRY

In an attempt to better define the relationship of drug effects on the eye, the National Registry of Drug-Induced Ocular Side Effects was established in 1976. This registry, housed at the University of Arkansas for Medical Sciences Campus in Little Rock, is sponsored by the FDA, the American Academy of Ophthalmology and the Arkansas Ophthalmological Society. It successfully completed its second year in June 1978, having registered hundreds of possible reactions related to the eye from all over the United States (Fig. 1).

## RETINOTOXIC EFFECTS

Optic nerve and retinal dysfunction may occur from the administration of certain drugs. In some the cause and effect is clearly understood, in others, it is only suspected. In general, they may be classed in three broad categories: (1) Retinopathy, (2) Optic Neuritis, (3) Papilledema. The symptoms are (A) visual disturbances (except in papilledema) which are usually (B) bilateral and (C) symmetrical.

General treatment principles involve discon-

tinuance or reduction of dosage at the earliest sign. Obviously, this must be weighed against the systemic benefits received from the drug.

## RETINOPATHY

The two most common and severe drug-induced retinopathies occur from the administration of antimalarials (chloroquine and hydroxychloroquine) for arthritis, etc., and the phenothiazine tranquilizers (chlorpromazine and thioridazine).

The antimalarials produce a maculopathy which in its end stage shows a typical "bull's eye" appearance (Fig. 2). Since dosage apparently plays the most important role, it is less seen when proper levels are maintained (chloroquine 250 mgm daily, hydroxychloroquine 200 mgm daily). Visual symptoms and altered color vision probably offer the earliest signs. Unfortunately, the maculopathy is irreversible and therefore discontinuance of the drug must be as early as possible.<sup>1,2</sup>

Phenothiazine retinopathy appears an idiosyncrasy that is dose and duration related. It results in a diffuse pigmentary retinopathy and altered vision (Fig. 3). One may see scattered throughout the retina multiple pigment spots which may progress after cessation of the drug. Upper level dosage recommendations are: chlorpromazine 200 mgm daily and thioridazine <800 mgm daily.<sup>3,4</sup>

A more controversial retinopathy involves the possible retinal vascular toxic effects of oral contraceptives. More and more reports are coming into the literature and the National Registry which implicate this possibility.<sup>5,6,7,8,9</sup> In general, they involve retinal vascular accidents (occlusion, hemorrhage, edema) in young females on oral contraceptives which, at least, statistically occur seldom in similar groups of age and sex not taking oral contraceptives (Fig. 4, 5). The im-

\*From the Department of Ophthalmology, College of Medicine, University of Arkansas for Medical Sciences, Veterans' Administration Hospital, and \*\*Retinal Group, Ltd., Little Rock, Arkansas.

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\*\*\*Dept. of Ophthalmology, University of Oregon Health Science Center, Portland, Oregon.

Reprint requests to: R. Sloan Wilson, M.D., Department of Ophthalmology, College of Medicine, University of Arkansas for Medical Sciences, Little Rock, Arkansas 72201.



THE NATIONAL REGISTRY OF DRUG-INDUCED OCULAR SIDE EFFECTS  
AND TOXIC DRUG EFFECTS ON THE RETINA

DRUG EXPERIENCE REPORT (IN CONFIDENCE)			Form Approved OMB No. 57-R0071
PATIENT INITIALS (Optional)	AGE	SEX <input type="checkbox"/> M <input type="checkbox"/> F	DATE OF REACTION ONSET
SUSPECTED REACTION(S) (We have particular interest in serious, rare and unusual reactions.)			
SUSPECTED DRUG(S); TRADE/GENERIC NAME (Manufacturer's name, if possible)			
DISORDER OR REASON FOR USE OF DRUG(S) (Optional)	ROUTE	TOTAL DAILY DOSE	DATES OF ADMINISTRATION
OTHER DRUGS TAKEN CONCOMITANTLY			
COMMENTS (Optional)			
PHYSICIAN'S NAME, ADDRESS, AND ZIP CODE			

FORM FD 1639a (6/74)

PREVIOUS EDITION MAY BE USED.

Figure 1 (Wilson).

Drug Report Form. Report form for National Registry of Drug-Induced Side Effects, University of Arkansas for Medical Sciences Campus, 4301 West Markham, Little Rock, Arkansas 72201.

portance of cigarette smoking in conjunction with these drugs is also under investigation. Further data, hopefully, will elucidate this problem.

**PAPILLITIS**

Optic nerve dysfunction such as papillitis (inflammation of the optic nerve) has been seen with numerous drugs.<sup>10</sup> Classic symptoms and findings include: decreased central vision (usually bilateral), field defects (usually central), swelling of the optic nerve (papillae) which may be subtle or absent (Fig. 6, 7).

Drugs known to cause optic neuritis include:

- (1) Chloramphenicol
- (2) Streptomycin
- (3) Insoniazid
- (4) Ethambutol
- (5) Pheniprazine
- (6) Penicillamine
- (7) Quinine
- (8) Digitalis

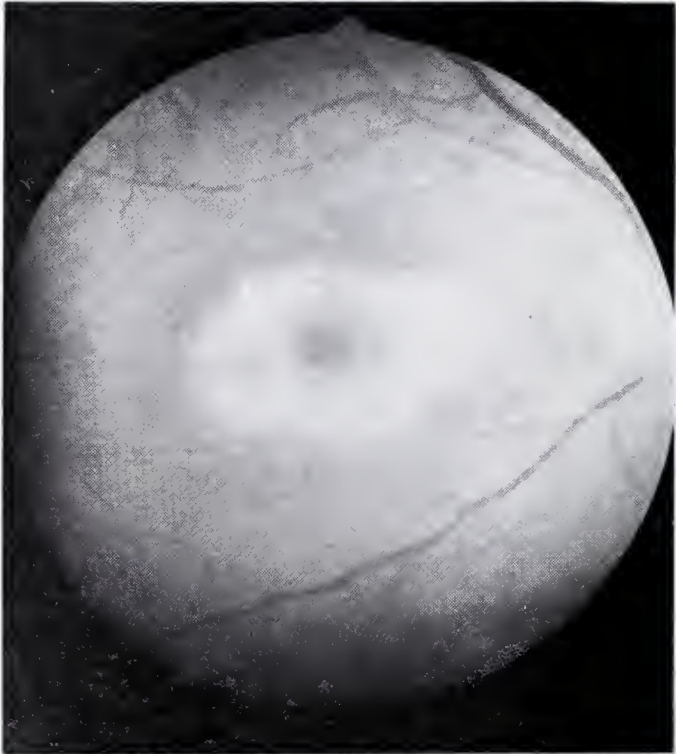


Figure 2 (Wilson).  
Classical "Bull's Eye" maculopathy from chloroquine.

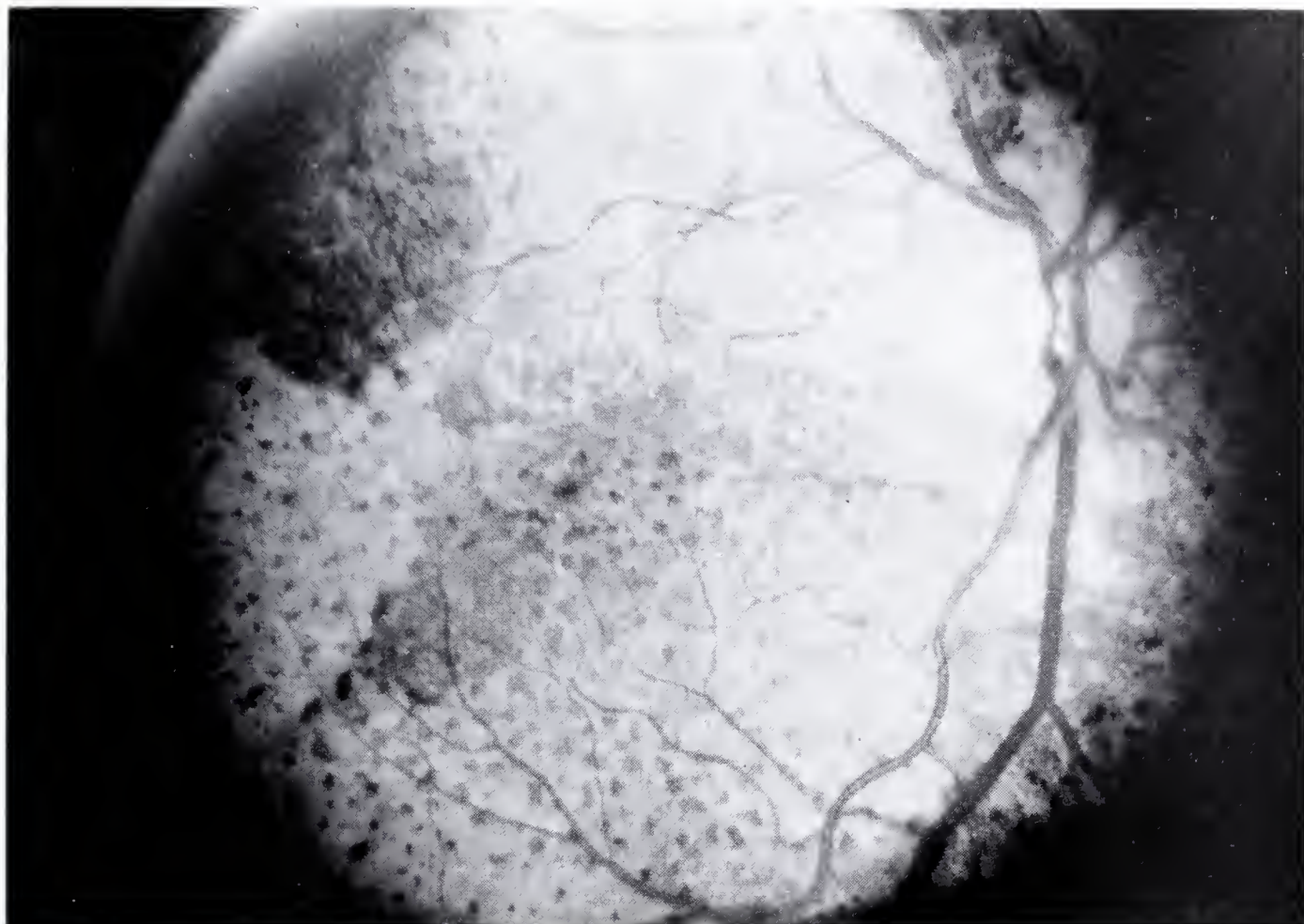


Figure 3 (Wilson).  
Retinal pigmentary dispersion secondary to Phenothiazine.

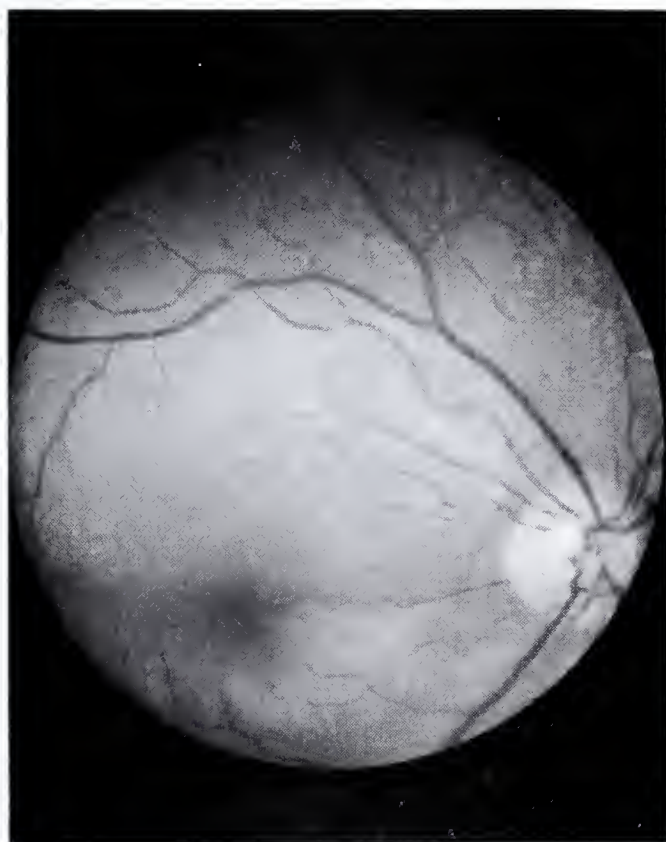


Figure 4 (Wilson).  
Right retinal artery occlusion presumably related to oral contraceptives. Note surrounding edema in posterior pole with darkened fovea ("cherry red spot").



Figure 5 (Wilson).  
Vascular obstruction presumably related to oral contraceptive.



THE NATIONAL REGISTRY OF DRUG-INDUCED OCULAR SIDE EFFECTS  
AND TOXIC DRUG EFFECTS ON THE RETINA

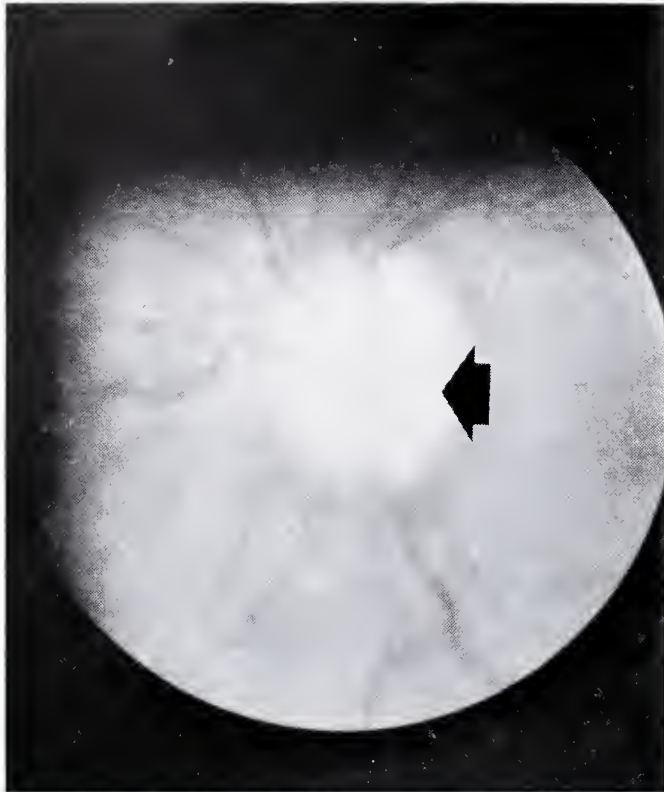


Figure 6 (Wilson).  
Optic nerve swelling secondary to papillitis.

- (9) Oral Contraceptives
- (10) Arsenicals
- (11) Alcohol
- (12) Ibuprofen
- (13) Chlorpropamide

After discontinuance, most signs and symptoms abate, but not always.

**PAPILLEDEMA**

Papilledema, swelling of the optic nerve pap-

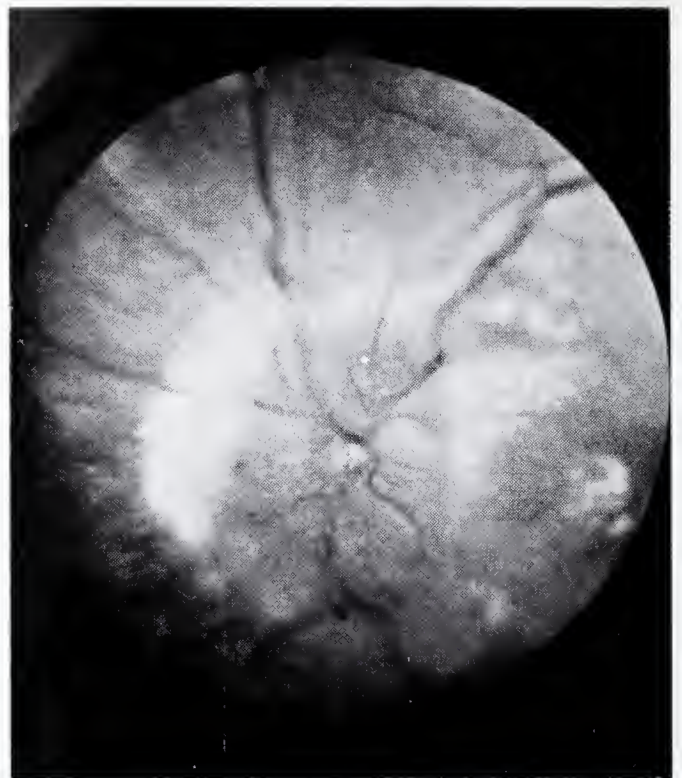


Figure 8 (Wilson).  
Optic nerve papilledema. Note blurred disc margin hyperemia and vascular engorgement.

illae, usually without visual loss, is a finding seen with certain drugs (Fig. 8, 9). This list shows the drugs known to cause papilledema.<sup>10</sup>

- (1) Hypervitaminosis
- (2) Corticosteroid therapy/withdrawal
- (3) Oral Contraceptives
- (4) Tetracycline
- (5) Nalidixic Acid (NegGram)

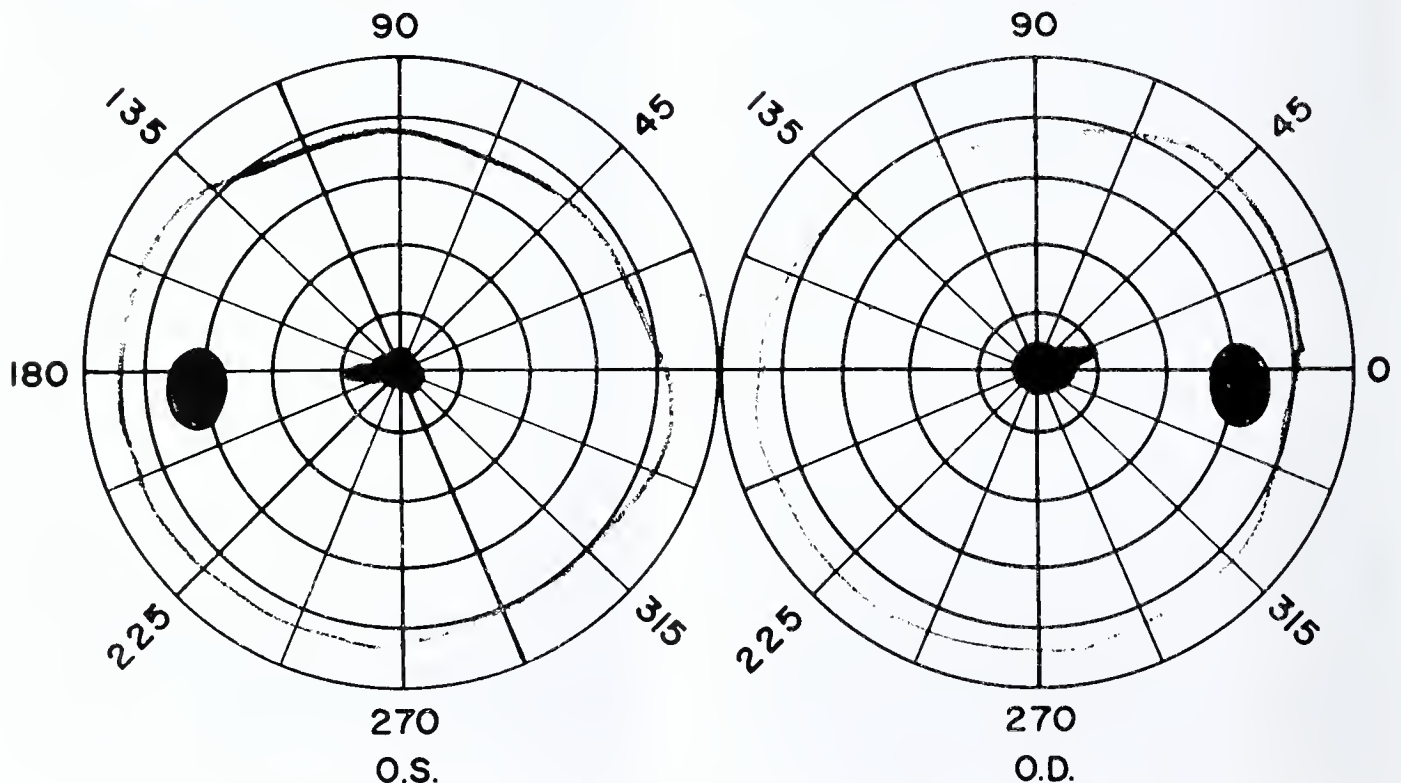


Figure 7 (Wilson).  
Visual Field in Papillitis, note central scotoma corresponding with visual loss.

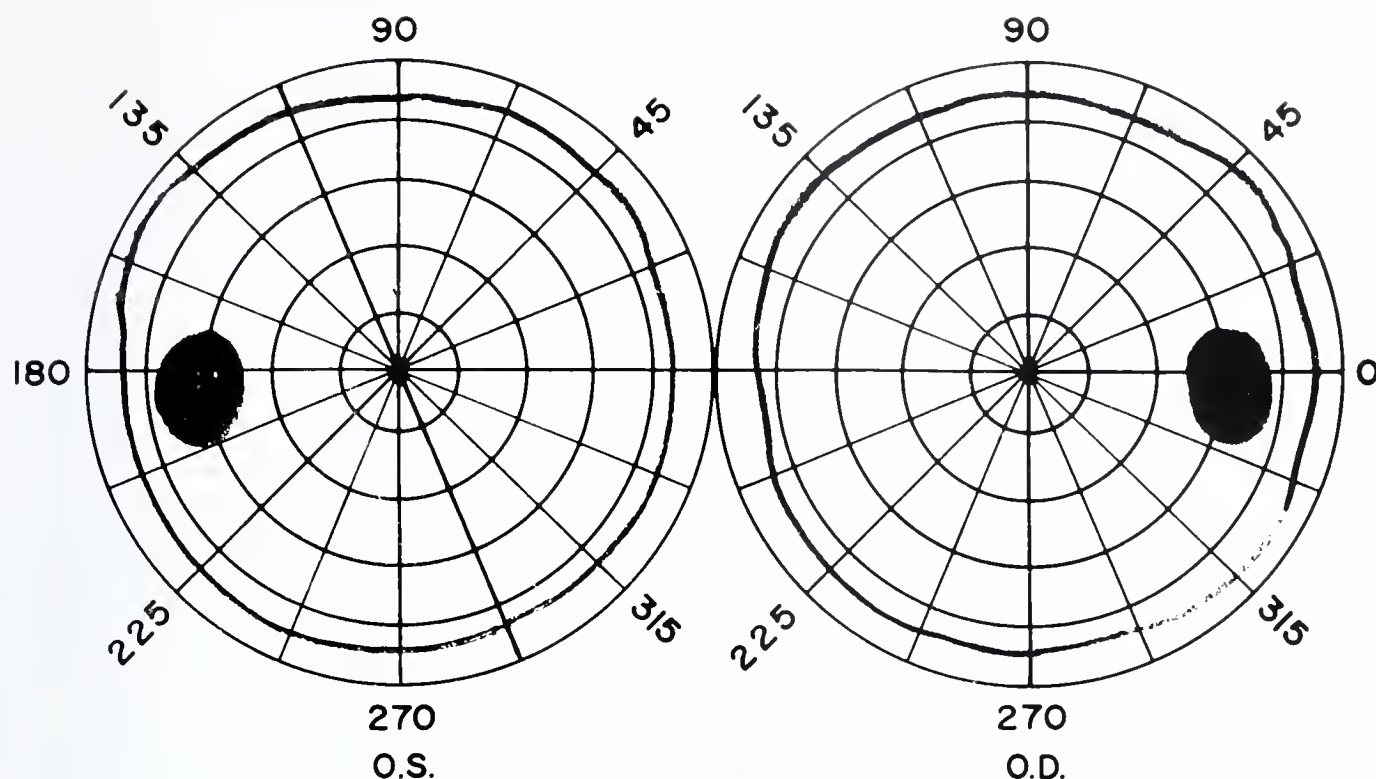


Figure 9 (Wilson).

Visual field in papilledema, note slightly enlarged blind spot without loss of visual acuity or central scotoma.

### SUMMARY

Classic forms of toxic retinopathy and optic nerve disease have been described and represent an uncommon but serious threat to vision in susceptible individuals. Early suspicion and diagnosis are stressed.

Cause and effect are difficult clinical assumptions. Further information is being gathered by the National Registry of Drug-Induced Ocular Side Effects, University of Arkansas for Medical Sciences, 4301 West Markham Street, Little Rock, Arkansas 72205, and all physicians are urged to report their cases.

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Acknowledgment: Dr. Frederick Davidorf, Columbus, Ohio, kindly supplied Figure 3.





# Amebic Meningoencephalitis in Arkansas\*

Terry Yamauchi, M.D., Jorge F. Jimenez, M.D., Tom W. McKee, M.D.,  
Arthur R. Euler, M.D., and Paul C. White, M.D.

## INTRODUCTION

Amebic infection of the central nervous system is a rare cause of meningoencephalitis. Although cases have been reported from California, Texas, Florida, Georgia, Virginia, Tennessee and New York, the following is the first documented report from the state of Arkansas.

## CASE REPORT

A six and one-half year old girl was enjoying her usual state of good health until two days prior to admission when she first complained of headache after returning home from swimming in a large fresh water reservoir in Northwest Arkansas. Early the next morning she awoke with fever and was taken to her local physician who noted an elevated temperature, increasing lethargy, and nuchal rigidity. Laboratory values included a peripheral white blood cell count of 16,700/cu mm with 94 percent polymorphonuclear cells and cerebrospinal fluid which contained 55 white blood cells/cu mm (66% monocytes, 34% polymorphonucleocytes), a protein level of 32mg/100ml and glucose of 4mg/100ml. Gram's stain showed two possible gram negative rods. Febrile agglutinins, including proteus OX-19, OX-2, and OX-K were negative. Urinalysis was unremarkable. With a presumptive diagnosis of meningitis, ampicillin, 1 gram every four hours was started. Over the next twelve hours she remained febrile, vomited several times, and became disoriented with hyperactive behavior. Because of her deteriorating status, she was transferred to Arkansas Children's Hospital.

Pertinent past history included a tick removal one week previously and uncomplicated varicella infection a month earlier.

Physical examination upon arrival at Arkansas Children's Hospital showed an acutely ill, constantly writhing child responsive only to pain. Temperature was 103°, pulse 170/minute, respirations were deep and rapid at 60/minute, and blood pressure was 140/80mm Hg. Ocular exam showed equal sluggishly reactive pupils with benign fundi. There was a lower right facial weakness and intermittent hypertonus of her left arm, leg, and truncal musculature. Deep tendon

reflexes were hyperactive, but equal bilaterally. The remainder of her examination was within normal limits except for a grade I/VI flow murmur and a palpable liver edge 4cms below the right costal margin.

A repeat lumbar puncture yielded turbid cerebrospinal fluid with 7,540 WBC/cu mm (92% polymorphonucleocytes, 8% monocytes). Protein was 1000mg/100ml; glucose, 3mg/100ml; leukocyte dehydrogenase (LHD), 400/IU; and lactic acid, 19mg/100ml. Counterimmuno-electrophoresis was negative for *H. influenzae*, *S. pneumoniae*, and *N. meningitidis*, groups A, B, C, D, X, and Y. Gram's stain showed no organisms and India ink prep was negative. Peripheral white blood cell count was 20,000/cu mm (94% polymorphonucleocytes). Serum sodium was 132meq/liter; potassium, 3.5meq/liter; chloride, 106meq/liter; and carbon dioxide, 11meq/liter. Serum glucose, BUN, creatinine, SGOT, SGPT, and LDH were normal. Creatinine phosphokinase was 90/IU. Ammonia was 12 $\mu$  moles/liter. Arterial blood gases showed a pH of 7.68, pO<sub>2</sub> of 107, pCO<sub>2</sub> of 11 and HCO<sub>3</sub> of 13.

The patient was thought to have bacterial meningitis unresponsive to ampicillin. She was placed on penicillin G., 2 million units, and chloramphenicol 500mg, IV at six hour intervals. Because of her severe respiratory alkalosis, the patient was intubated, sedated, and placed on assisted ventilation. Intravenous fluids were restricted. Over the next several hours she remained alkalotic but became relatively hypoxic, with rales and frothy-pink sputum. A central venous pressure line was inserted and readings of 0-2 cm of H<sub>2</sub>O obtained. Serial chest x-rays showed progressive right upper lobe and perihilar alveolar infiltrates without cardiomegaly. The pulmonary edema and hypoxia responded clinically to diuresis and positive end expiratory pressure. Urine output remained adequate. Fourteen hours after admission she became hypotensive and developed sinus bradycardia which progressed to asystole. Resuscitation efforts were unsuccessful and she expired 16 hours after admission to Arkansas Children's Hospital, two and one-half days after onset of symptoms.

\*From the Department of Pediatrics and Pathology, University of Arkansas for Medical Sciences, Arkansas Children's Hospital, and the Arkansas State Health Department, Little Rock.

### AUTOPSY FINDINGS

Post mortem examination demonstrated a well-developed, well-nourished six and one-half year old girl with no external malformations. Abundant pink foamy fluid filled her nostrils and nasal passages. The heart exhibiting mild right ventricular dilatation. The lungs were edematous, extremely congested and had areas of confluent consolidation. The tracheobronchial tree contained abundant pink-gray foamy mucoid fluid. The liver, spleen, kidneys, and adrenals were congested, otherwise of normal shape and weights. The brain weighed 1,435 gm. It was diffusely and symmetrically swollen with flattening of the cerebral gyri and narrowing of the sulci (Figure 1). The leptomeninges of the brain and spinal cord were cloudy, owing to a sub-arachnoid exudate more prominent over the base of the brain. Bilateral uncal notching and cerebellar tonsillar herniation was present. Over the convexity and predominantly over the base of the brain stem and cerebellum there were multiple petechial hemorrhages. Coronal sections of the brain showed no areas of softening or discoloration. The ventricular system was not dilated.

Microscopically, the heart revealed scattered foci of degeneration and fiber necrosis. There was no evidence of inflammatory response. The lungs demonstrated severe pulmonary hemorrhagic edema, confluent bronchopneumonia and aspiration pneumonitis with irregular hyaline membranes. A careful search failed to reveal amebae. The kidneys showed congestion, foci of tubular degeneration and necrosis. The liver exhibited prominent centrilobular and sinusoidal congestion. The brain revealed acute meningoencephalitis and choroiditis with a prominent exudate of neutrophils and monocytic cells beneath the arachnoid, filling the Virchow-Robin spaces (Figure 2). Extensive acute inflammatory exudate was present in the cerebellum, pons, medulla, and spinal cord. Striking perivascular acute inflammatory reaction was present extending from the surface of the brain into the gray matter. On hematoxylin and eosin stains trophozoites of amebae were demonstrated as round or oval structures 10 to 12 microns in diameter. Their cytoplasm were eosinophilic and sometimes vacuolated. A prominent magenta-colored karyosome surrounded by a clear halo was very characteristic (Figure 3). Amebae were most

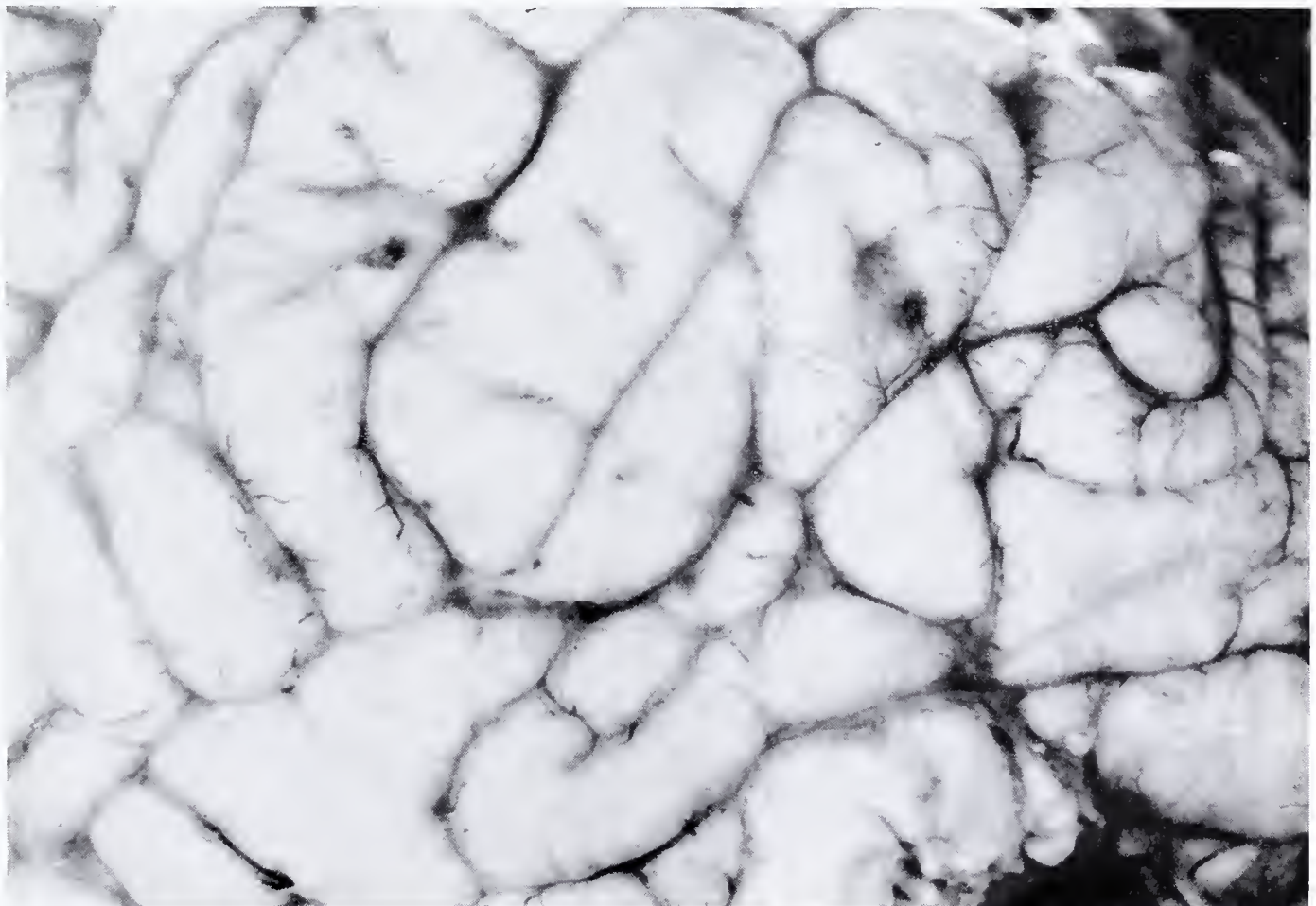


Figure 1.  
Cerebrum lateral aspect, exhibiting severe edema and scattered petechial hemorrhage.



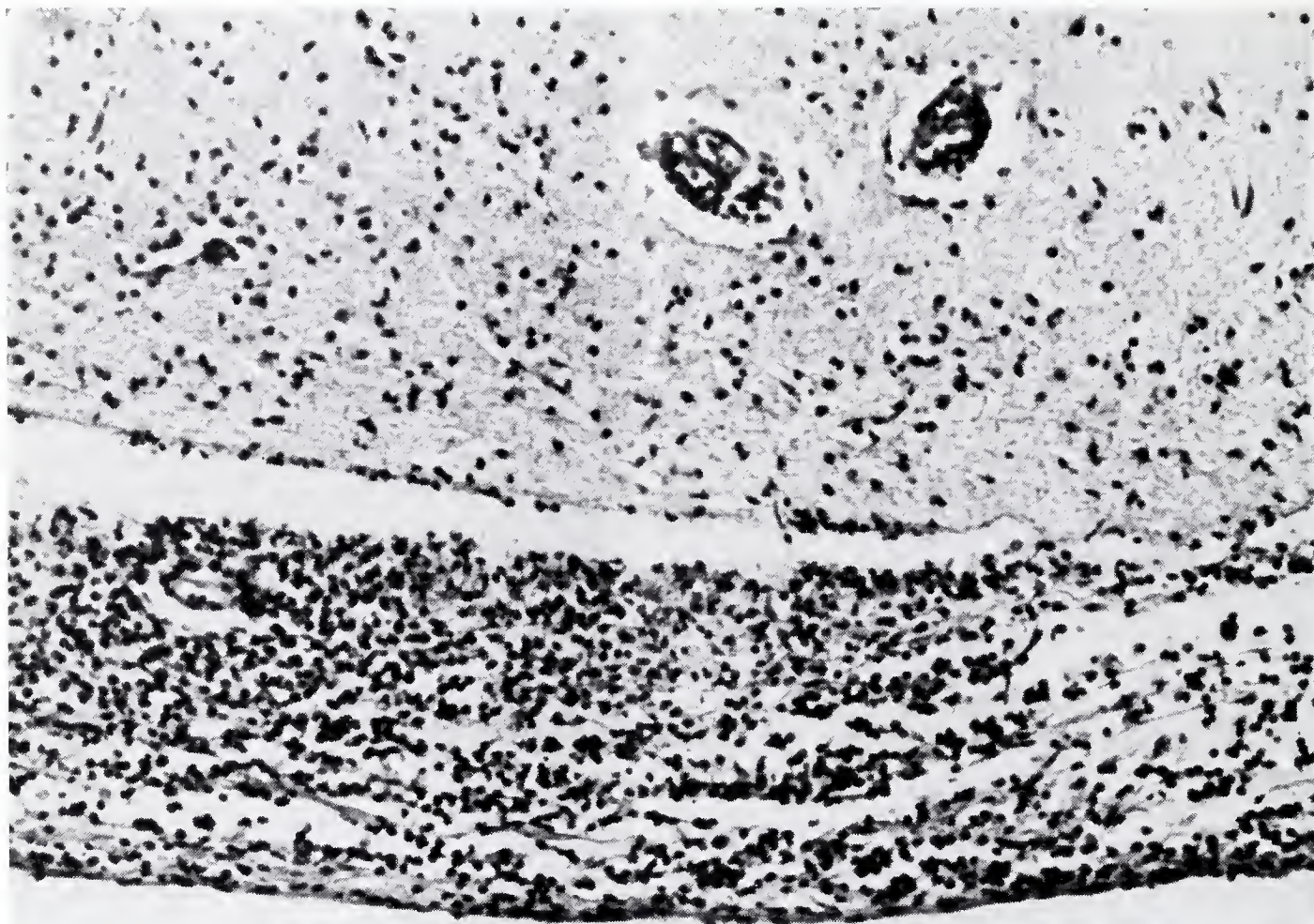


Figure 2.  
Severe purulent meningoencephalitis. Note the prominent perivascular edema and inflammation (H & S x 40).

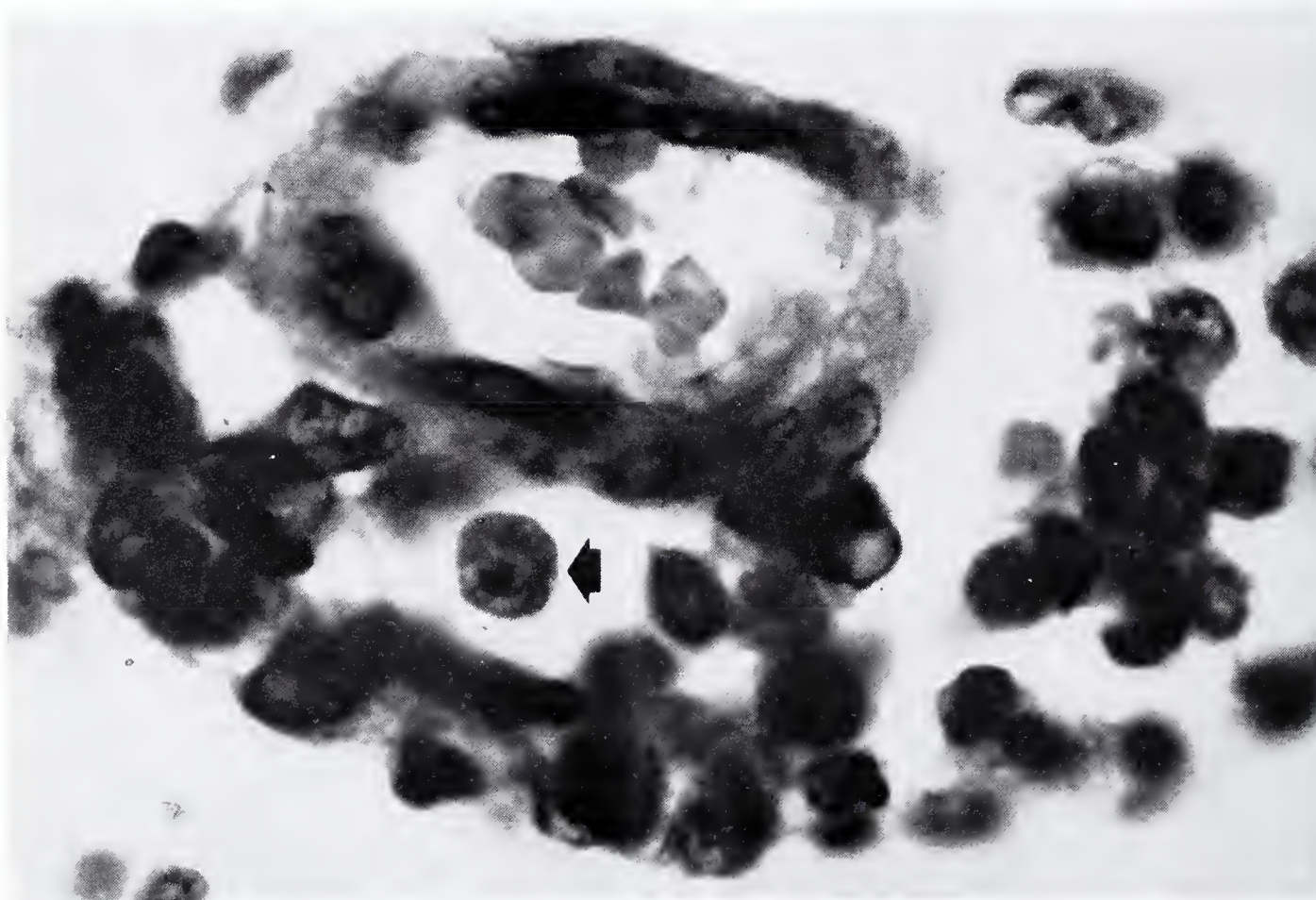


Figure 3.  
Amebae in different planes of section, mixed inflammatory cells and perivascular edema. Characteristic morphology of ameba (arrow) with prominent karyosome and clear halo (H & E x 450.)



numerous in the gray matter in a perivascular location. However, the choroid plexus of the fourth ventricle exhibited the most significant "concentration" of free amebae associated with severe acute inflammation (Figure 4.) Organisms were also demonstrated in the pons, spinal cord and spinal meninges. Diffuse individual neuroid cell necrosis was prominent.

#### DISCUSSION

Amebic infection of the central nervous system is rarely diagnosed before autopsy. Even when early diagnosis is made, the outcome is usually fatal.

A clinical history of swimming in a warm, fresh water reservoir; followed by headache and fulminant meningoencephalitis is characteristic of the majority of central nervous system infections caused by this organism.<sup>1-5</sup> The organism implicated in our case is a free-living ameba, ubiquitous in nature. They are unicellular microorganisms widely distributed geographically, found in soil, water, and decaying organic matter. They possess a trophozoite or ameboid stage and have the ability to undergo encystment. Most

trophozoite have a single central nucleus, however, occasional binucleated or multinucleated organisms are seen. Although the exact mode of transmission of this agent is unknown, the trans-nasal route of infection is now generally accepted.<sup>6-8</sup>

Primary amebic meningoencephalitis is classified into three major types: 1) acute, 2) chronic, and 3) benign aseptic.<sup>9</sup>

In acute primary amebic meningoencephalitis the time period from exposure to onset of symptoms is quite variable, ranging from 1 day to 3 weeks. The duration from onset of symptoms to death averages 4 to 6 days. The abrupt onset of headache is the most consistent symptom, followed by lethargy, mild fever, rhinitis and sore throat. Progression of symptoms is rapid, with increasing severe headaches, high fever, projectile vomiting and nuchal rigidity all developing over a 2-3 day period. Seizures, disorientation and coma develop by day 4 or 5 soon followed by death from cardiopulmonary failure.

Chronic primary amebic meningoencephalitis differs from the acute course in that it occurs in the chronically ill patient or following head

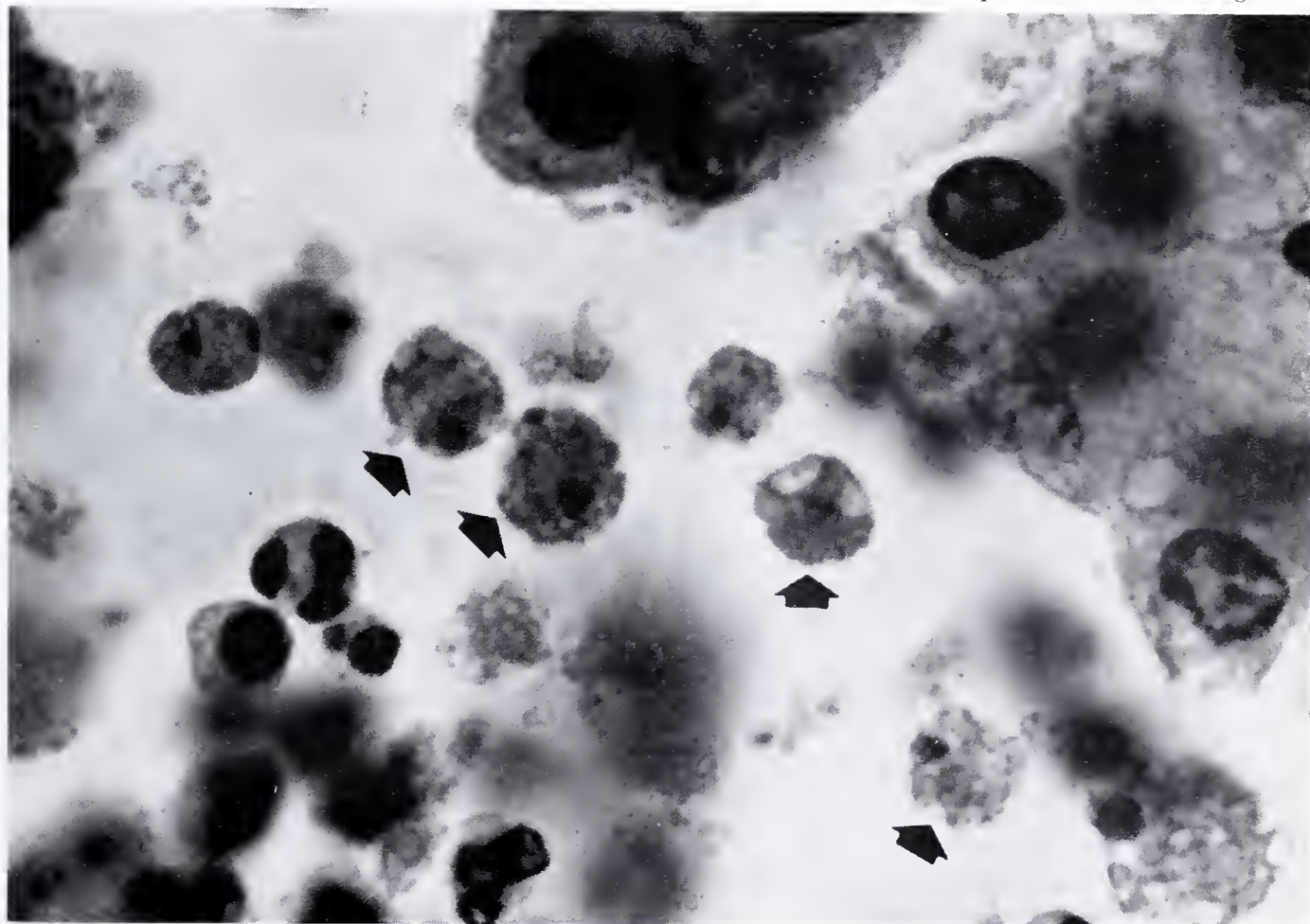


Figure 4.  
Choroid plexus IV ventricle. Several free amebae, some in "degeneration" (arrows) "floating" in the spinal fluid. A few polymorphonuclear leukocytes are also present (H & E x 450).



trauma. The course is more prolonged and the clinical features less striking.

Only one case of aseptic amebic meningoencephalitis has been reported.<sup>10</sup> In this patient amebic organisms were found in the cerebrospinal fluid and recovery occurred without specific treatment. This report has been criticized since the organism recovered was considered a laboratory contaminant.<sup>11</sup>

Routine laboratory studies are non-specific. A leucocytosis, reflective of an acute inflammatory response, is often present. Cerebrospinal fluid examination is consistent with acute bacterial meningitis.<sup>2</sup> The total white cell count is increased with neutrophils the most prevailing cell. The protein is markedly elevated, frequently greater than 400mg/100ml.

Cerebrospinal fluid containing amebae when added to cell cultures may produce a cytopathic effect similar to the changes caused by virus, and thus result in the incorrect diagnosis of viral meningoencephalitis.<sup>12, 13</sup>

The diagnosis of primary amebic meningoencephalitis can be made by examination of the cerebrospinal fluid for motile amebae. Fluid should not be centrifuged, refrigerated or exposed to anaerobic conditions. A wet mount or hanging drop preparation examined under a light microscope will usually reveal the organisms. If more detailed examination is desired, hematoxylin and eosin, Wright, iron hematoxylin or Giemsa stains may be used.

The treatment of primary amebic meningoencephalitis has been largely ineffective at altering the clinical course.<sup>2</sup> Amphotericin B administered intravenously, intraventricularly and intrathecally has not been effective. Other agents including steroids, chloroquine, tetracycline, emetine and methotrexate have been equally unsuccessful.<sup>4, 14</sup> Most recently, a report from California was made of a successfully treated case of

amebic meningoencephalitis.<sup>1</sup> The details of this therapy have not yet been published.

\* \* \* \*

The authors wish to thank Kenneth O. New, M.D., for referring this patient and Ms. Donna Pilcher for her technical assistance in preparation of this manuscript.

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# Medical Grand Rounds:

## Myxedema and the Heart\*

William J. Carter, M.D., David L. Vesely, M.D., Louis L. Sanders, M.D.,  
Fred H. Faas, M.D., and Peter O. Kohler, M.D.

This paper reviews the clinical presentation, laboratory diagnosis, and treatment of hypothyroidism. Cardiovascular abnormalities that may occur in moderate to severe primary hypothyroidism are emphasized. An illustrative case report of a patient with severe primary hypothyroidism and cardiomegaly follows.

### CASE REPORT

W. L. is a 47-year-old Caucasian female who was first seen at the University of Arkansas for Medical Sciences in 1977 with a chief complaint of cold intolerance for many years, lethargy, and chronic constipation requiring laxatives. Past history reveals that she took thyroid medication from 1 year of age until 5 years of age when her local doctor died. The family did not see any reason to continue the thyroid and she was on no thyroid replacement until seen at the age of 45 at UAMS. Past history also reveals that the patient did not start school until 7 years of age because she was so short. She did finish 12 grades of school with the help of special education classes. The patient began to have menses at age 12, but never had a period lasting longer than 3 days.

On examination in August 1977, she had coarse dry skin, deep voice, enlarged tongue, puffy eyes, and deep tendon reflexes with a markedly delayed relaxation phase. Cardiac exam was normal and chest x-ray revealed a normal size heart. The serum thyroxine ( $T_4$ ) was 1.9 (Normal 4.5-16.5  $\mu\text{g}/\text{dl}$ ), and the TSH was 85 (Normal, up to 10  $\mu\text{U}/\text{ml}$ ). She was begun on 50  $\mu\text{g}$  of Synthroid (l-thyroxine) daily with the dose gradually increased up to 150  $\mu\text{g}$  in October 1977. At this point, she appeared markedly improved and her  $T_4$  was 9.8. When the patient was next seen in June, 1978, she again complained of hoarseness, constipation, weakness, calf pain, and dyspnea on exertion. It was apparent that the patient had been taking much less thyroid hormone than

intended. Chest x-ray at this time showed a dramatic increase in cardiac size (16 $\frac{1}{4}$  cm vs 13 $\frac{1}{4}$  cm) when compared to the previous chest x-ray with similar inspiration and film magnification. The  $T_4$  was 1.6, the TSH 69, and the Cholesterol 320. The Echocardiogram revealed bilateral ventricular enlargement with the right ventricle larger than the left, but no pericardial effusion. In August 1978, a repeat Echocardiogram showed similar findings and cardiac catheterization revealed bilateral poor ventricular function with generalized hypokinesis. There were diffuse arteriosclerotic changes of both coronary arteries with localized areas of high grade stenosis.

Physical exam revealed a weight of 114 pounds and height of 4' 9". Her pulse was 60 and BP 120/80. The skin was dry and coarse with scaling at the lateral eye margins. There was a non-pitting subcutaneous infiltrate over both legs. Her tongue was increased in size. The thyroid was nonpalpable. The hair was very coarse, and the voice was deep and gruff. The heart was clinically enlarged with the PMI displaced 3 cm to the left of the midclavicular line in the 6th intercostal space. The deep tendon reflexes showed a markedly delayed relaxation phase.

### I. SIGNS AND SYMPTOMS OF HYPOTHYROIDISM

Signs and symptoms that may be encountered in hypothyroidism are listed in Table 1. The symptoms in the present patient included cold intolerance, chronic constipation, lethargy, and weakness that was most marked in her legs. The signs of hypothyroidism in this patient were dull facial expression, periorbital swelling, droopy eyelids, coarse sparse hair, coarse dry skin, macroglossia, cardiomegaly, bradycardia, and intellectual impairment. The periorbital edema, hair changes, and macroglossia appear to be caused by the deposition of a mucinous ground substance in the dermis, hair follicles, and submucosal areas.

Signs of hypothyroidism that this particular patient did not have include carotenemia, which causes a yellow color of the palms and the soles

\* From the Division of Endocrinology, University of Arkansas for Medical Sciences, and Little Rock Veterans Administration Medical Center.

Presented on April 26, 1979. Edited by Dr. Peter O. Kohler.



**TABLE 1**  
**SIGNS AND SYMPTOMS OF HYPOTHYROIDISM**

## Symptoms:

Weakness  
Lethargy  
Cold intolerance  
Poor memory  
Constipation  
Weight gain  
Menorrhagia

## Signs:

Dry, coarse, cool skin  
Decreased sweating  
Pallor  
Slow speech  
Slow pulse  
Edema of eyelids and face  
Coarse, dry hair  
Hoarse voice  
Peripheral edema  
Delayed relaxation phase  
of deep tendon reflexes  
Macroglossia  
Deafness  
Slowed cerebration

because of deposition of carotene in the epidermis. She also failed to exhibit obvious pleural or abdominal effusions which may be found in severe hypothyroidism. Hypothyroid patients may have paresthesias of the hands and feet which may be due to deposition of a mucinous ground substance in the ligaments around the wrists and ankles causing nerve compression. Menorrhagia may also be seen in hypothyroidism. Anemia is often present in hypothyroidism and is usually normochromic, normocytic in character. There may be a hypochromic anemia attributable to menorrhagia in some of these patients. Occasionally a macrocytic anemia related to decreased intrinsic factor synthesis and impaired B12 absorption is present. Hypothermia may occur in severe hypothyroidism. Our patient did not have a low temperature. Hypothermia is one of the hallmarks of myxedema coma, and a temperature below 85° indicates an extremely bad prognosis.

**Comparison of Clinical Features in Primary and Secondary Hypothyroidism**

One of the clues to secondary hypothyroidism, where the deficiency is one of pituitary function, is amenorrhea. The amenorrhea in these patients is due to deficiency of pituitary gonadotrophins. It should be recognized that amenorrhea can also occur in severe primary hypothyroidism. In secondary hypothyroidism the skin and hair are

dry but not as coarse as in primary hypothyroidism. Skin depigmentation probably related to associated pituitary hormone deficiency is more often noted in secondary hypothyroidism. Macroglossia is more prominent in primary hypothyroidism. The heart shadow on chest x-ray is often small in secondary hypothyroidism in contrast to the enlarged heart shadow often seen in primary hypothyroidism. In the patient with secondary hypothyroidism the blood pressure is often low and the patient may have hypoglycemia which is due to associated adrenal insufficiency. When the diagnosis of hypothyroidism is made, it is important to establish whether the etiology is primary thyroid failure or deficient function of the hypothalamic-pituitary axis. If this is done, associated manifestations of pituitary insufficiency and possible presence of a pituitary tumor will not be overlooked.

**II. LABORATORY DIAGNOSIS OF HYPOTHYROIDISM**

Once the possibility of hypothyroidism is entertained, it is relatively easy to make the diagnosis by finding the combination of a low serum thyroxine by radioimmunoassay (T<sub>4</sub>-RIA) and an elevated thyroid stimulating hormone (TSH).

Other thyroid function tests of little or no value in diagnosing hypothyroidism will be mentioned briefly.

While the I<sup>131</sup> uptake is an excellent test for the diagnosis of hyperthyroidism, it is of little use in hypothyroidism. This is due to the fact that the lower limits of normal which were 15% in the 1950's, have dropped to as low as 5% in the 60's and 70's.<sup>1</sup> In all likelihood this is due to the increased dietary intake of iodine in the general population. The increased iodide intake increases the iodide content of body fluids and dilutes the tracer dose of radioactive iodide used for the uptake study. This dilution causes a lower percentage of the radioactive iodide to be taken up by the thyroid gland. At any rate, the low limits of normal makes it difficult to separate out the truly hypothyroid patient.

Similarly, the measurement of triiodothyronine (T<sub>3</sub>-RIA) is not useful in hypothyroidism, primarily due to the large number of euthyroid individuals who may have low values (the so-called "Euthyroid Sick" Syndrome).<sup>2</sup> This is graphically illustrated by data from Carter, et al.<sup>3</sup> as shown in Table 2. T<sub>3</sub>-RIA levels in a variety of illnesses were well within the usually accepted range for

TABLE 2  
THYROID FUNCTION TESTS IN CHRONIC ILLNESS

Disease	T <sub>3</sub> , ng /100 ml	T <sub>4</sub> , µg /100 ml	TSH, µu/ml	
			Baseline	ΔTRH
Controls (range) -----	137 (77 - 178)	9.1 (6.1 - 11.7)		
Chronic Liver Disease -----	116	7.1	2.0	14
ICU Patients -----	51	6.0		
Disseminated Malignancy -----	59	7.2		
Chronic Lung Disease -----	63	6.5		
Chronic Renal Disease -----	63	4.2		

From Carter, et al., Lancet 2:971, 1974.

hypothyroidism. However, the T<sub>4</sub>-RIA levels were normal, as were the TSH levels. In addition, the response of the TSH levels to stimulation by thyrotropin releasing hormone (TRH) was in the range seen in euthyroid individuals.

The T<sub>4</sub>-RIA is the diagnostic test of choice and will be reliably low in the great majority of patients. The main cause of false derrangement in T<sub>4</sub>-RIA levels are abnormalities in the binding proteins of thyroxine in plasma; albumin, prealbumin, and thyroid-binding globulin (TBG). Of these TBG is the most important. Levels of TBG are normal in most conditions, but may be elevated with pregnancy, estrogen therapy, and other drugs producing a falsely elevated T<sub>4</sub>-RIA. TBG levels may be low with androgen therapy, steroids, Dilantin (phenytoin), protein-losing illnesses such as nephrotic syndrome, producing a low T<sub>4</sub>-RIA.

If the question of altered binding proteins arises, it may be answered either by measuring TBG by radioimmunoassay (TBG-RIA)<sup>4</sup> or by the T<sub>3</sub> resin uptake test (T<sub>3</sub> RU), which measures the available binding sites in the plasma proteins. This can then be related mathematically to the T<sub>4</sub>-RIA to give another value (T7, T12, or Free Thyroxine Index) which allows assessment of the actual levels of free T<sub>4</sub> present. In most cases, this extra assessment is unnecessary.

Theoretically, direct measurement of the free T<sub>4</sub> levels would be helpful if a question of binding protein abnormalities arises. However, free T<sub>4</sub> exists in extremely small amounts (less than 1% of the total T<sub>4</sub>) and its measurement is extremely difficult. Recently new immunoassay methods for measuring free T<sub>4</sub> have been developed which may make this test more useful in the future.

The "Sine Qua Non" for the diagnosis of pri-

mary hypothyroidism is an elevated TSH. Because of reduced feedback inhibition of the pituitary, elevated TSH levels are seen in all patients wth primary hypothyroidism.<sup>5</sup> Figure 1 illustrates the clear separation of hyophthyroid patients from normal by the TSH levels.

Thus, in summary, the combination of a low T<sub>4</sub>-RIA and TSH establishes the diagnosis of primary hypothyroidism. On the other hand, if the

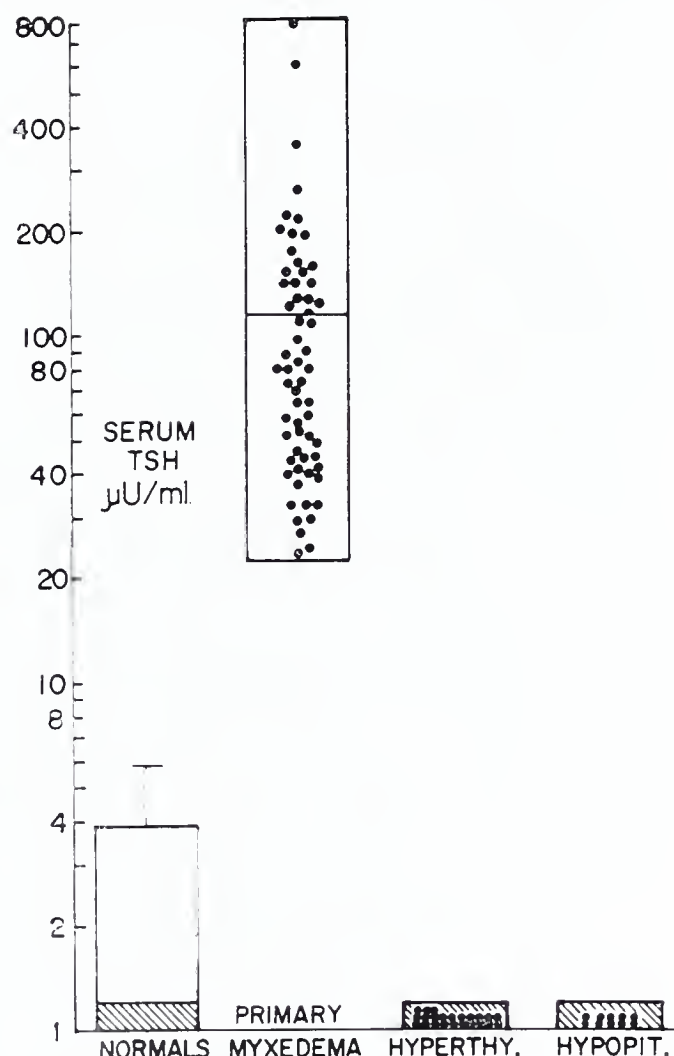


Figure 1.  
Serum thyrotropin (TSH) in normals (vertical bar shows SD), primary myxedema, hyperthyroidism, and hypothyroidism secondary to hypopituitarism. After Hershman, et al., in reference 5.



patient is clinically hypothyroid, the  $T_4$ -RIA is low, and the TSH is not elevated, the presence of a pituitary or hypothalamic lesion must be suspected. In this instance the presence of pituitary tumor should be sought by radiologic study of the sella and visual field examination. Furthermore, pituitary function testing should be done to evaluate the adequacy of pituitary trophic hormones other than TSH.

### III. CARDIOVASCULAR ABNORMALITIES IN MYXEDEMA

Cardiovascular abnormalities are common in moderate to severe hypothyroidism, particularly when the hypothyroid patients are middle-aged to elderly. For this reason, cardiovascular problems occurring in myxedema will be emphasized. During this discussion, the term myxedema will refer to patients with moderate to severe primary hypothyroidism. Topics covered in this discussion include the following: effect of hypothyroidism on cardiovascular physiology; cardiovascular abnormalities encountered in myxedema; and good as well as bad effects of thyroid hormone treatment in myxedematous patients with heart disease.

#### Effect of Thyroid Hormone on Cardiovascular Physiology

Decreased levels of thyroid hormone depress myocardial contractility while elevated levels enhance it. This has been demonstrated in studies of isolated ventricular papillary muscles *in vitro*,<sup>6</sup> in intact animals,<sup>7</sup> and in man.<sup>8-9</sup> The indices of myocardial contractility most commonly used in these studies are the rate of shortening and tension development in myocardial fibers.<sup>6-9</sup> In myxedema, a thyroid hormone deficit causes a reduced rate of myocardial fiber shortening, thereby decreasing ventricular ejection rate, stroke volume, and cardiac output.<sup>8</sup> Conversely, thyroid hormone excess causes an accelerated rate of myocardial fiber shortening thereby increasing ventricular ejection rate, stroke volume, and cardiac output.<sup>8</sup> Therefore, the capacity of the heart to pump blood is clearly reduced in hypothyroidism.<sup>6-9</sup>

Although cardiac output is reduced in myxedema, the vast majority of these patients are not in heart failure.<sup>10</sup> Tissue oxygen consumption is also reduced<sup>10</sup> and cardiac output increases with exercise.<sup>10</sup> The possibility that heart failure may rarely occur in uncomplicated myxedema will be discussed.

### Cardiovascular Abnormalities Encountered in Myxedema

**Electrocardiographic Findings.** ECG abnormalities commonly encountered in myxedema include sinus bradycardia, generalized low voltage, generalized flattening or inversion of T waves, and prolongation of the PR interval.<sup>10-12</sup> In a series of 53 patients with myxedema, 27 patients had at least three of these four ECG findings.<sup>12</sup> The frequent occurrence of pericardial effusions in myxedema undoubtedly contributes to the ECG abnormalities, especially low voltage.<sup>10</sup> However, all the above abnormalities, including low voltage, can occur in the absence of pericardial effusions indicating that myocardial factors are also important in causing ECG abnormalities.<sup>10,12,13</sup>

**Pericardial Effusions.** Pericardial effusions frequently occur in myxedema.<sup>13</sup> In a series of 33 patients with moderate to severe primary hypothyroidism studied by echocardiography, 10 patients (30%) had pericardial effusions.<sup>13</sup> Only 70% of the patients with effusions had cardiomegaly on chest x-ray while 25% of the patients without effusions had cardiomegaly.<sup>13</sup> Therefore, the presence or absence of cardiomegaly on the chest x-ray was not a reliable indicator of a pericardial effusion. Nevertheless, pericardial effusion is a frequent cause of an enlarged heart shadow in myxedema. For this reason, an echocardiogram should be done to rule out pericardial effusion before other causes of cardiomegaly are considered.

The pericardial fluid in myxedema typically has a protein content in excess of 4g per 100 ml. In spite of the high protein content, the cell count is low, and the pericardial surface does not show histologic evidence of inflammation.<sup>10</sup> Rarely, cholesterol crystals in the fluid cause a "gold paint" appearance.<sup>10</sup> The pericardial effusion in myxedema uniformly disappears with thyroid hormone therapy although several months may be required for resolution.<sup>13</sup>

Excess pericardial fluid in myxedema usually collects slowly enough that it does not embarrass cardiac function. However, cardiac tamponade has rarely been reported in myxedema.<sup>14</sup> These reports have described classic symptoms of hypotension, paradoxical pulse, and elevated central venous pressure, which are dramatically relieved by removal of pericardial fluid. A review published in 1975 collected 13 cases of cardiac

tamponade in myxedema.<sup>14</sup>

*Occurrence of Cardiomegaly in Myxedema.* Cardiomegaly is common in myxedema. In an analysis of 53 patients with myxedema, Aber and Thompson found 23 patients (43%) to have normal heart size and 30 patients (57%) to have cardiomegaly.<sup>12</sup> In another series of 33 myxedematous patients, 13 had cardiomegaly.<sup>13</sup> Therefore, approximately one-half of myxedematous patients can be expected to have cardiomegaly on chest x-ray.

Is this cardiomegaly a direct result of the hypothyroid state or is it due to associated heart disease? In an attempt to answer this question, Aber and Thompson compared age, blood pressure, and incidence of angina in a group of myxedematous patients with normal heart size to a group of patients with cardiomegaly.<sup>12</sup> Patients with normal heart size were younger (mean age 45 vs 59), had a lower blood pressure (125/82 vs 167/103), had a lower incidence of hypertension (14% vs 85%), and had a lower incidence of angina (7% vs 49%) when compared to patients with cardiomegaly. This illustrates the fact that associated heart disease is very common in myxedematous patients who manifest cardiomegaly. If a pericardial effusion can be excluded, it is very likely that the myxedematous patient with cardiomegaly has associated heart disease, particularly hypertension and coronary artery disease.

Cardiomegaly and congestive heart failure that cannot be attributed to pericardial effusion or associated heart disease, have rarely been reported in myxedema.<sup>15,16</sup> In these uncommon instances, it appears that poor myocardial contractility resulting directly from thyroid hormone lack causes ventricular dilation and thereby cardiomegaly. A case showing striking resolution of marked cardiomegaly and heart failure following thyroxine treatment has been reported.<sup>15</sup> In this instance, the echocardiogram showed very poor myocardial contractility initially, which markedly improved following thyroid hormone treatment. It should be emphasized that ventricular dilation due directly to the hypothyroid state is an uncommon cause of cardiomegaly in myxedema. Pericardial effusion and associated heart disease are much more frequent causes.

#### **Good and Bad Effects of Thyroid Hormone Treatment in Myxedematous Patients with Heart Disease**

In most myxedematous patients, myocardial

contractility and performance can be expected to improve with thyroid hormone treatment.<sup>9</sup> However, patients whose myocardial reserve has been markedly diminished by associated disease may be exceptions to this rule. Whether or not cardiac performance improves, an increase in myocardial and total body oxygen consumption can be expected with return to the euthyroid state. Therefore, in myxedematous patients with severe coronary artery disease, thyroid hormone therapy may precipitate angina or worsen pre-existing angina.<sup>17</sup> Likewise, congestive heart failure may be precipitated or worsened in myxedematous patients with severe underlying heart disease whose myocardium cannot respond to the inotropic effect of thyroid hormone.<sup>18</sup> Treatment of myxedematous patients with heart disease will be discussed in detail in the following section.

#### **IV. TREATMENT OF HYPOTHYROIDISM**

In most patients with uncomplicated hypothyroidism, treatment is relatively simple. In addition to making the patient clinically euthyroid, treatment with thyroid hormone lowers the serum cholesterol in the hypothyroid patient and thus may prevent the development or worsening of arteriosclerotic heart disease. L-thyroxine ( $T_4$ ) has a number of advantages over other forms of thyroid hormone in the long-term treatment of hypothyroidism. The administration of  $T_4$  alone in the patient with primary hypothyroidism will result in normal serum  $T_3$ -RIA as well as  $T_4$ -RIA levels.<sup>19</sup> This is due to the fact that  $T_4$  is converted to  $T_3$  in the body. Therefore, it is not necessary to give mixtures of  $T_4$  and  $T_3$  to produce physiological levels of both hormones.

The development of the TSH assay in recent years has allowed a better evaluation of the average dose of  $T_4$  required to maintain chemical as well as clinical euthyroidism. If one determines the lowest dose of  $T_4$  which will suppress the TSH level into the normal range in a group of hypothyroid patients, the average amount required is 165  $\mu\text{g}$  per 24 hours ( $2\frac{1}{2}$   $\mu\text{g/kg/day}$ ).<sup>19</sup> Ninety percent of patients will be chemically and clinically euthyroid with doses between 100-200  $\mu\text{g/day}$ . This is in contrast to the previously recommended doses of 200-300  $\mu\text{g/day}$ . Children appear to require slightly larger doses of thyroid hormone on a body weight basis, i.e. 3-4  $\mu\text{g/kg/day}$  of  $T_4$  with perhaps even higher doses required in infants less than one year of age.<sup>20</sup>



In the uncomplicated hypothyroid patient under age 30, therapy can be begun with the full replacement dose of  $T_4$ . In the uncomplicated patient between ages 30-50, it is probably best to begin with about half the usual maintenance dose, 50-100  $\mu\text{g}/\text{day}$ , increasing the dose by 50  $\mu\text{g}$  at monthly intervals until the patient is clinically euthyroid. In such patients, after a daily dose of 150  $\mu\text{g}$  has been achieved for a period of one month, a serum  $T_4$  may be obtained to verify that it is in the normal range and if the patient is doing well clinically, no other chemical measurements need be made.

In the hypothyroid patient over 50 years of age and in patients of any age with co-existing heart disease, a more gradual approach should be taken in achieving full replacement dosages of thyroid hormone. In the patient with asymptomatic heart disease or over age 50, treatment should begin with 25-50  $\mu\text{g}$  of  $T_4$  daily, increasing the dose by 25  $\mu\text{g}/\text{month}$  until the patient is clinically and chemically euthyroid as indicated by normal serum  $T_4$  and TSH levels. If angina pectoris or any other cardiac complication develops during thyroid hormone therapy, the dose should be reduced until the patient stabilizes and then cautiously increased by smaller increments as tolerated.

In severe primary hypothyroidism, enhanced myocardial contractility occurs as a result of treatment with thyroid hormone as evidenced by shortening of the pre-ejection period.<sup>9</sup> Increased myocardial oxygen consumption will also occur with return to the euthyroid state. It is the balance of this enhanced myocardial contractility and the increased myocardial oxygen consumption that may determine whether a hypothyroid patient with heart disease may develop angina or experience worsening of pre-existing angina with treatment. In one large study from the Mayo Clinic,<sup>17</sup> 112 patients with angina were identified in 1500 consecutive patients with myxedema. Of these patients with angina, nine patients had worsening of pre-existing angina and 12 patients developed angina during the first year of thyroid hormone therapy. However, angina disappeared in five patients during thyroid hormone treatment and improved conspicuously in an additional 16. Therefore, there is approximately an equal chance of the angina getting better or worse with thyroid hormone treatment.

In treating such patients, the use of very small

doses of thyroid hormone such as 12.5  $\mu\text{g}$   $T_4$  daily is recommended as the initial therapy, increasing the dose by 12.5  $\mu\text{g}$  about every two weeks. The use of  $T_3$  has been discouraged in such situations as initial therapy because of changes in serum  $T_3$  levels following oral therapy. Serum  $T_4$  levels remain relatively constant following oral  $T_4$ . However, no metabolic effect of thyroid hormone has been demonstrated to follow the serum level; specifically, TSH levels do not vary acutely with the serum levels.<sup>21</sup> In hypothyroidism,  $T_3$  has its peak action in two days with a gradual disappearance of its metabolic effect over several days whereas  $T_4$  has its peak action at about seven days and gradual disappearance of its metabolic effect over a period of 1-2 weeks. Thus, the more rapid onset and shorter duration of action of  $T_3$  allows a more rapid increase in dose and a more rapid disappearance of any adverse effect should this develop during treatment. Although most endocrinologists currently favor the use of  $T_4$ , treatment with  $T_3$  in a dose of 5  $\mu\text{g}$  per day initially and increasing the dose every 3-5 days may be a reasonable alternative to  $T_4$  in some patients with severe heart disease and hypothyroidism. Once the euthyroid state is achieved, however, long-term maintenance with  $T_4$  is the treatment of choice.

In treating patients with severe angina and hypothyroidism, other adjunctive measures include the short and long acting nitrites. Hypotension has rarely been reported as a complication of such treatment.<sup>22</sup> The utility of propranolol as an adjunct in such patients may be limited by the bradycardia often seen in myxedema which may preclude the use of  $\beta$ -blocking doses of propranolol. Moreover, propranolol does not block the entire inotropic effect of  $T_4$ . Consequently, it may not be adequate to prevent angina in such patients. In a recent study, four patients whose severe angina precluded thyroid hormone therapy underwent coronary artery bypass successfully.<sup>22</sup> Following coronary artery bypass all four of these patients were then able to achieve clinical and chemical euthyroidism without development of severe angina. An occasional patient may need to be suboptimally treated and maintained in a slightly hypothyroid state to prevent severe angina. One caution in treating hypothyroid patients is that these patients require reduced dosage of many drugs such

as digitalis and sedatives. This is due to slower drug metabolism and perhaps unusual sensitivity to certain drugs.

Treatment of the rare case of myxedema coma requires an aggressive approach with thyroid hormone in contrast to the very conservative approach in patients with heart disease. Although there are no prospective controlled studies which demonstrate that one treatment is better than another, many investigators feel that patients with myxedema coma should be treated with approximately 500  $\mu$ g of thyroxine intravenously as soon as the problem is recognized followed by 100-200  $\mu$ g of thyroxine daily.<sup>23</sup> Successful treatment with T<sub>3</sub> administered by nasogastric tube has been reported.<sup>24</sup> Treatment with 200-300 mg of hydrocortisone daily is also recommended because the patient's thyroid deficiency may be of pituitary origin. Also, patients with primary hypothyroidism have sluggish cortisol production in response to stress. In patients with myxedema coma who have marked hypothermia, active re-warming of the patient is not recommended. One should simply allow the body temperature to gradually rise as the patient becomes euthyroid. Treatment of precipitating causes of myxedema coma such as infection is essential. Other problems in myxedema coma that frequently require attention are maintenance of artificial ventilation if the patient has hypoventilation with hypoxia and CO<sub>2</sub> retention, and treatment of hypoglycemia and dilutional hyponatremia.

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## ELECTROCARDIOGRAM

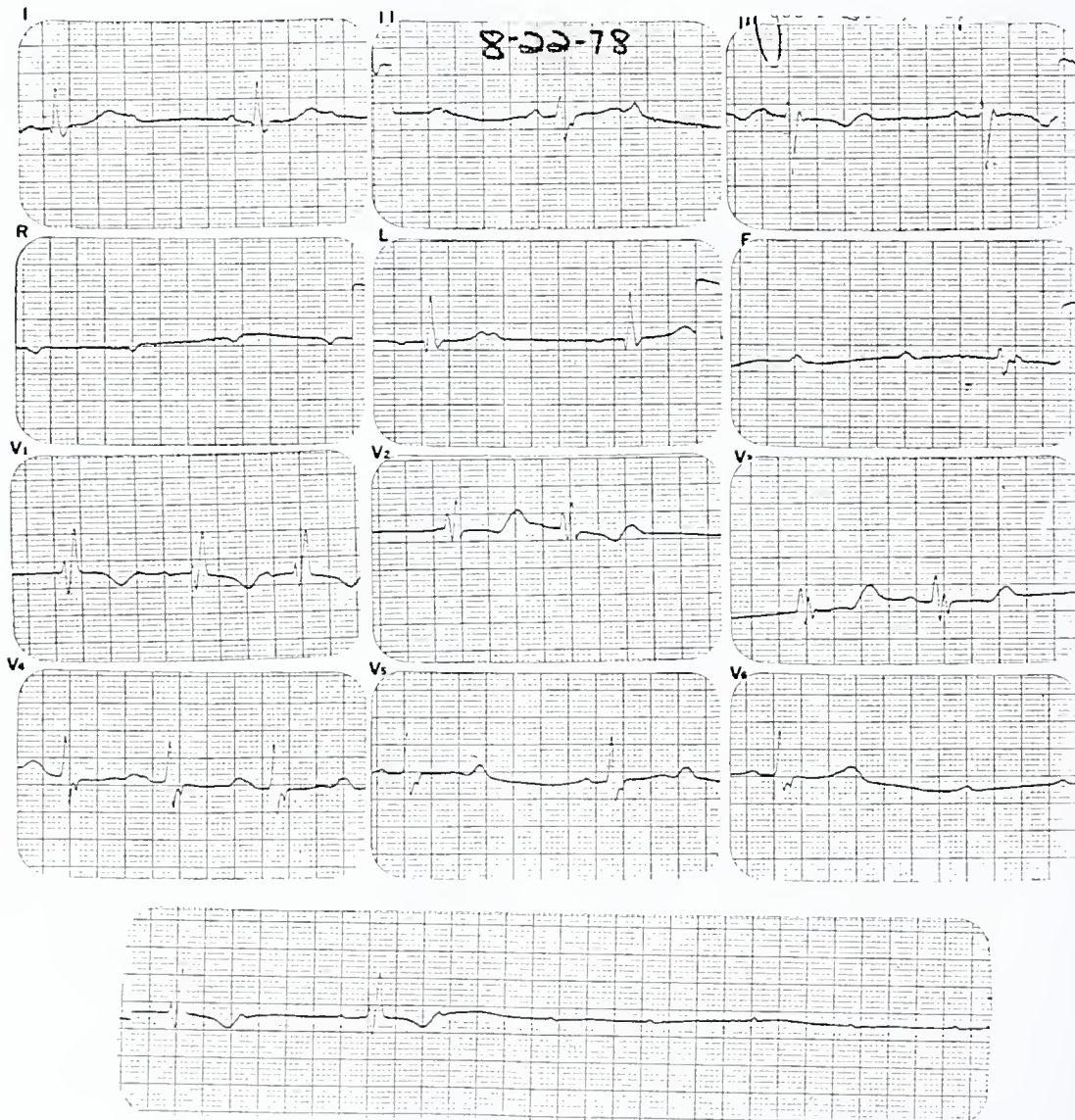
## OF THE MONTH

The Department of Cardiology, University of Arkansas College of Medicine  
(See Answer on Page 178)

HISTORY: R. H. is a seventy-two-year-old lady who presented to the emergency section for treatment of a fractured hip sustained during a syncopal attack. The cardiovascular examination revealed a blood pressure of 170/60 mm Hg, occasional cannon A-waves in her neck veins, and a grade II/VI systolic ejection murmur at the left sternal margin. Her twelve lead ECG and V1 rhythm strip are shown.

Which of the following statements are true and which are false?

1. High degree AV block is present.
2. Right Bundle Branch Block is present.
3. Left ventricular fascicular block is present.
4. Ventricular pacing is indicated.



John W. Watson, M.D.  
Assistant Professor  
Division of Cardiology  
University of Arkansas for Medical Sciences  
4301 West Markham  
Little Rock, Arkansas 72201



## PUBLIC HEALTH AT A GLANCE

# School Hearing and Vision Screening - Referrals

Ray Clinton\*

Recent medical literature stresses the importance of early identification of vision and hearing problems. Vision and hearing screening, like any type of screening program, attempts to separate normal children from those that may be at risk for a disorder. The Arkansas Department of Health's Hearing and Vision Screening Program is designed to assist in this identification. When physicians receive referrals it is their responsibility to determine if a problem is present and the referral justified.

Currently, the Maternal and Child Health Division of the State Health Department furnishes forms, equipment, training and retesting for the Hearing and Vision Screening Program, as needed. It costs only 36¢ per youngster screened, retested and referred. This figure includes all expenses such as travel for the vision and hearing consultants, forms, equipment for loan to volunteers and salaries for all paid personnel. The program is one of the major bargains in public health service today.

Why is it so important? In order for anyone to reach his or her full potential and get the most out of life, it is imperative to have both vision and hearing functioning at its optimum capacity.

Many people have been labeled slow learners, lazy, inattentive and even retarded simply because they cannot see or hear well. Obviously, the early detection and recognition of visual or hearing loss will greatly increase the success rate in preserving and restoring the precious gift of sight and sound. To this end the Arkansas Department of Health offers the vital Hearing and Vision Screening Program to pre-school and school age children on a first-come, first-served basis.

Equipment, materials and personnel are provided through the Division of Maternal and Child Health to train volunteer groups. Local organizations such as the PTA, International Lions Club and Junior Auxiliaries are taught the proper use of equipment and how to maintain screening records.

Upon completion of training the volunteers perform the initial screening for day care centers, kindergartens, schools or any facilities where children are a captive audience. Any child having difficulty with the initial screening is "re-screened" two to six weeks later by the vision and hearing consultant or possibly by the school nurse or the public health nurse. If he or she continues to experience difficulty, a written notice is forwarded to the parents suggesting that the child be taken to the doctor of their choice for a professional evaluation.

The initial vision screening uses a stereoscopic device similar to the "View Master" with which many children are familiar. It is patterned after the Massachusetts Screening Test which uses the "E" symbol facing different directions. A game is played to condition the young child to respond to certain given positions of the "E." This is also used with children who are difficult to test. The "tests" are for visual acuity in each eye independently and for phoria (muscle balance) in the eight and under age bracket. The plus lens test identifies children who are farsighted.

A visual acuity level of 20/30 is considered adequate for the younger (pre-school level) child with particular emphasis on the same acuity in either eye. The older child is expected to read at or near the 20/20 level. Consideration is given to performance in school activities, particularly in near-oriented tasks, as well as achievement of

\* Public Health Educator Supervisor, Maternal and Child Health Division, Arkansas Department of Health, 4815 West Markham, Little Rock, Arkansas 72201.



the same level in either eye before referral is made for professional evaluation.

The hearing screening utilizes an individual discreet puretone portable audiometer encompassing the frequencies of 1000 Hz, 2000 Hz, and 4000 Hz at 20 dB for the first screening. If the child does not hear one or more of the frequencies at 20 dB, he or she is "retested" approximately four weeks later. Assuming the trouble persists an audiogram will be obtained to determine the child's hearing threshold for 500, 1000, 2000, 4000, and 6000 Hz.

If rescreening continues to indicate difficulty, a basic audiogram is obtained and a written notice is sent out to the child's parents suggesting they contact the child's physician.

Usually a nerve involved hearing loss cannot be determined by routine otoscopic examination. Although a mild degree of hearing loss may not appear to affect the child's ability to communicate in the quiet office of a physician, it could have substantial effects on the child's ability to learn in school. Thorough audiological examinations can be performed by certified audiologists.

The State Department of Health also offers comprehensive audiological evaluations to Arkansas residents from infancy to age 21. Hearing and Speech Clinics are located at 4815 West Markham Street in Little Rock and at the East Arkansas Regional Health Unit, 111 Cook Street in Forrest City.

Recently, the Hearing and Screening Vision Program conducted a statewide survey which indicated that more Arkansas youngsters will be

screened during the 1979-80 school year than ever before. The program has come a long way from the first vision screening clinic in Mena which was established in the late 1940's. The advent of public kindergartens and the establishment of the pre-school vision screening program in the mid 1960's increased the number of youngsters four-years-old to school age who could be screened.

Unfortunately, there are still a large number of children with communication and vision disorders who have managed to complete their basic education without ever having been properly identified. During the 1978-79 school year 254,725 children were screened for vision and hearing problems. Of these, 9,749 indicated measurable difficulty. Notices were sent to their parents with the suggestion that they be taken for a professional examination. Of those referred, 1,492 went to a physician or optometrist. The follow-up data is limited; however, it is assumed that *more* children were examined by physicians than the figures indicate.

When a child is taken to a doctor after experiencing trouble on a vision or hearing examination, the Arkansas Department of Health's Hearing and Vision Program would like to be made aware of the results. In this manner the program can measure its effectiveness. It can also offer information to any school or children's center interested in implementing a hearing and vision screening program. Simply write or call:

Arkansas Children's Hearing and Speech Clinic  
4815 West Markham Street  
Little Rock, Arkansas 72201  
Telephone: 661-2328 or 661-2185



#### ANSWER—Electrocardiogram of the Month

DISCUSSION: The ECG shows other than a sinus mechanism, with an atrial rate of 83 beats/minute and a highly variable ventricular rate. AV dissociation is present and long runs of ventricular asystole are present, with there being no QRS complexes in AVR for instance. RBBB is present as in LAFB. Ventricular pacing is obviously indicated.



## EDITORIAL

# More on High Blood Pressure

Alfred Kahn, Jr., M.D.

There is a new provocative article entitled "Linking the Kallikrein and Renin Systems Via Activation of Inactive Renin," published by Laragh and his co-workers at the Cornell Medical Center. The work shows an integration of the activity of two seemingly adverse systems to regulate blood pressure. They explain that the two systems seem to follow related parallel paths: renin and kallikrein act on similar alpha 2 globulins angiotensin and kinogen. This leads to the formation of angiotensin on the one hand, and to bradykinin on the other. Taking this one step further, it has been shown that angiotensin converting enzymes can work in both systems causing the activation of the angiotensin series by the formation of angiotensin II and the inactivation of bradykinin. These actions would seem to act as counter-balances. Laragh, et al., reports that there are further associations between the two systems: drugs that inhibit converting enzymes lower the blood pressure and the further discovery that urinary kallikrein appears to activate a pro-renin like material which as the authors state, would put it in a "trigger point" in the renin system. Laragh feels that although the two systems have the ability to act in an integrated way so that they could control the systemic blood pressure without jeopardizing the blood flow through the kidney — angiotensin would keep the arterioles in a partial state of contraction and bradykinin in the kidneys would cause local vasodilatation. The Laragh group feel that the bradykinin effect is mostly renal and the renin-angiotensin system works mostly extra renal. Converting enzyme inhibitors could play a most crucial role in this overlapping two system hierarch — and may have real clinical value.

Laragh, Letcher and Pickering have published

an instructive article in *The Journal of American Association on Renin Profiling for Diagnosis and Treatment of Hypertension* (Volume 241, p. 151, January 12, 1979). They feel that renin — aldosterone — angiotensin axis plays a fundamental role along with sodium in controlling blood pressure. They believe that hypertensives can be divided into the vasoconstriction type and the excessive volume type — with graduations in between. The scale from hypertension due to vasoconstriction to most volume expansion runs stepwise; from malignant hypertension to pheochromocytoma to unilateral renovascular to EHT, high renin to EHT, low renin, diuretic non respondus to EHT, normal rein to bilateral renovascular to EHT, low renin diuretic responders to primary aldosteronism. Their records indicate that hypertensive patients fall into three groups: low renin, normal renin, and high renin. Patients with low renin do not have the high incidence of heart attacks and strokes that the high renin patients have. Renin function can be blocked by propranolol; saralasin can block angiotensin II action; and converting enzyme inhibitors can block angiotension II formation. Using these tools Laragh feels that his research shows that vasoconstrictive hypertension relates to high renin levels and can be treated in light of this. In contrast high blood pressure associated with expanded volume does not respond to anti-renin treatment but does respond to reducing sodium and blood volume as by diuretics. The authors have a graphic schema in which they profile hypertensive patients.

If the renin is high, they consider renovascular hypertension and measure renal vein renins — if unilaterally high, they perform surgery and if bilaterally high, they use beta blockers. If the renin is normal beta blockers and possibly di-



uretics are used; later other drugs may be added as Prozolin, Hydralazine, etc. Low renin high blood pressure is treated with diuretics and possibly a beta blocker or some of the drugs mentioned above as Prazosin. Low renin with low potassium level is usually carefully investigated to determine if excessive production of Aldosterone is present — and perhaps adrenal surgery in selected cases.

Brunner and a large group of associates have completed a study entitled "Oral Angiotensin — Converting Enzyme Inhibitor In Long Term Treatment of Hypertensive Patients" (Annals of Internal Medicine, Volume 90, page 19, January,

1979). They used captopril. It was given to eight patients with essential hypertension, eight patients with renovascular hypertension and six had high blood pressure with kidney failure. They found that the drug reduced the blood pressure in all of the patients; they report that diuretics had to be used additionally in several patients. Apparently, the blood pressure fall tends to be more pronounced in the patients with high renin hypertension which would be anticipated. There were very few side effects.

The advances in our understanding of hypertensive disease are marked. Despite this, ideal therapy is still unavailable.



## MEDICINE IN THE



### THE MONTH IN WASHINGTON

President Carter has given the Congress a detailed preview of a national health insurance (NHI) proposal that would require all businesses to provide workers comprehensive private health insurance meeting federal standards. Catastrophic coverage would be mandated and the cost would be partially borne by the federal government.

The first phase of the program would cost about \$15 billion. By contrast the Labor-Kennedy bill has a price tag of from \$30 billion to \$40 billion; and the third major NHI plan — the catastrophic only approach — has an estimated cost of \$5 billion to \$10 billion.

The Administration rushed its measure out after months of tinkering and plotting in order to meet previously scheduled hearings of the Senate Finance Committee on NHI and hospital cost containment. Chairman Russell Long (D-LA) has threatened speedy action on his favorite catastrophic plan.

The American Medical Association believes, "the Administration appears to offer expanded benefits on one hand while restricting the avail-

ability of services and resources on the other," according to Frank Jirka, M.D., Vice Chairman of the AMA Board of Trustees.

Dr. Jirka added, "arbitrary government controls don't reduce costs — they simply reduce care available without addressing the public's demand and need for health care."

On the other hand, Dr. Jirka said the program, "does address major issues with which we have been concerned. For example, the AMA has supported expanded catastrophic and basic insurance coverage in the private sector, the filling of insurance gaps created during periods when insurance is not available through an employer, and equity and uniformity within the Medicare and Medicaid programs."

The Administration measure is structured in such a way that Congress would have to approve each succeeding stage of implementation of the program, whereas the Kennedy-Labor NHI Bill would have the stages automatically phased-in by law. This is the major difference between the two approaches and the principal reason for the rift between the President and Kennedy on NHI.

The President's plan provides catastrophic

coverage for workers for out-of-pocket expenses above \$2,500, increased federal control of Medicaid and Medicare, and complete coverage of all prenatal and birth costs.

Rep. Charles Rangel (D.-N.Y.) Chairman of the House Ways and Means Health Subcommittee, said he told President Carter he would sponsor the measure when it reaches bill form.

A mandatory fee schedule will be proposed by setting a standard fee at the Medicare average in states or substate areas and then raising substandard Medicaid fees in those areas to that level over time. Physicians could not charge — or be reimbursed — above the fees established in the schedule. A process of negotiation would be established for subsequent fee schedule changes.

On the private side, the names of physicians who are willing to adhere to the schedule will be published in order to increase consumer choice. "A Commission will be established to look at reimbursement questions and to advise whether more stringent measures are necessary to hold down health costs and increase physician participation in the public programs."

Medicaid would be expanded and made more uniform, and a more liberal income requirement for Medicaid eligibility would be established, bringing many more people into the program, all at major new federal cost.

The most controversial features of the Administration proposal from the standpoint of health providers will be the many control features that bristle throughout the proposal.

The mandatory hospital cost containment measure is included as a provision of the NHI plan as well as in the separate measure now hung up in Congress, giving lawmakers the option of approving it in either form.

However, it is reported that the Administration is veering toward a relatively more simple plan that in its beginning stages would be mostly confined to the provision of catastrophic health benefits.

By thus jettisoning a big chunk of the President's proposed first stage NHI, the Administration would move closer to that of Sen. Long whose proposal has some chance of Congressional approval.

The Administration is said to be willing to settle for the controls embodied in the Hospital

Cost Containment Act and abandon the physician fee and other controls in the plan originally outlined by President Carter.

Long is trying to hammer out a consensus bill and has indicated he is willing to go along with the Administration on the hospital measure. The Senator said he's not sure the nation can afford more than a catastrophic benefit, but said there might be room for added coverage for poor people.

Sen. Kennedy appeared before the Finance Committee, saying "we want to work with you. There is very keen desire . . . there is no pride of authorship." He said he is willing to compromise. Despite the conciliatory atmosphere, Kennedy didn't suggest where he might be willing to compromise. He has said he's opposed to a simple catastrophic plan and opposed to any plan that calls for a first step NHI only.

Kennedy said he could support any plan that would provide cost controls, equal treatment of the population, competition within the medical system and needed reforms.

Long said the sense of Congress must be gauged on the issue of cost controls and additional medical care. "I just want to see us get together and pass the best bill that the House and Senate will accept."

The Senator has made it clear, though, that he will stick to his long-held position favoring catastrophic despite the Administration's much more extensive program, and has given no indication that he is prepared to make significant compromises.

At the same time, the lawmaker, who wields great influence in the Senate, said, "I don't think the nation can afford — nor does it want — womb-to-tomb health insurance coverage." Referring to the Kennedy-Labor Bill, though not by name, he said a single package comprehensive NHI would bind future budgets and future Administrations "to what may be inappropriate or unaffordable expenses for health insurance."

\* \* \* \*

The House Republican Research Committee has said that Sen. Edward Kennedy's new national health plan bears a number of fundamental similarities to the British National Health Service "which foreshadow the direction this nation's health care delivery system could be expected to go if Kennedy's bill became law."



The Committee, an arm of House Republicans, said both the British National Health Service and the Kennedy proposal provide universal coverage and comprehensive benefits — with no cost sharing. Under the Kennedy plan, certain mental health, drug and other benefits would be limited, but like the British system all hospital and physician services, x-rays, lab tests, and most other services would be provided “free” upon treatment.

“The side effect of such ‘free’ care is, of course, limitless demand. And with a limited number of providers trying to meet the limitless demand, a rationing of services — as already exists in England — would inevitably result,” the Committee’s Task Force on Health Policy said.

\* \* \* \*

Two key health lawmakers have issued a detailed critique of the Administration’s Hospital Cost Bill contending it “would have virtually no impact on the overall rate of inflation.”

The controversial proposal is still teetering in three of the four jurisdictional committees of the Congress, the State Labor and Human Resources having passed it earlier.

Reps. Phil Gramm (D.-TX) and Dave Stockman (D.-MI) said the rise in hospital costs, while continuous, is nowhere near as high as the Administration suggests in its arguments for the cap proposal.

The two members of the House Commerce Health Subcommittee said in the nine states that now have mandatory control programs (which are cited by HEW as examples of how mandatory programs can work), there has been very little impact on hospital costs.

In a 78-page detailed analysis of the plan, they said the Administration’s estimated savings of \$53.4 billion “is either wildly overstated, or it implies that HEW intends to severely cut the service capacity of those hospitals unlucky enough to fall under mandatory controls.”

The Administration’s contention that hospitals can prevent bankruptcy under this legislation is completely unsupported by the evidence, they declared.

The report shows that while costs are rising, actual out-of-pocket expenditures for health and hospital care by the American people, when adjusted for inflation, have remained constant for decades.

According to the representatives, the real reason for the rise in costs is the “tremendous growth” in hospital insurance coverage that pays first-dollar costs, but provides little real protection for serious illness.

Rep. Gramm said the HEW proposal “would add to the massive burden of paperwork and red tape now facing the nation’s hospitals, ‘ration’ the quality and availability of hospital care without significantly reducing costs, and subject the health care industry to the ‘whims of HEW.’”

\* \* \* \*

Overly stringent Food and Drug Administration regulations and delay are unduly retarding approval of new drugs and discouraging investigators from developing them, the AMA has told Congress.

“We do not believe at this time the benefits derived from FDA’s current safety and efficacy procedures and conservatism exceed the detriments that are caused by the lack of availability of new drugs in the U. S.” said Ray Gifford, M.D., a member of the AMA’s Council on Drugs and head of the Department of Hypertension and Nephrology at the Cleveland Clinic.

Dr. Gifford told a House Science Subcommittee that in recent years physicians have noticed “a disturbing trend that drugs ultimately approved in this country as major treatment breakthroughs have been available in other countries for significant periods of time prior to U. S. marketing.”

A complete list of drugs that were marketed earlier in foreign countries include important drugs that could have made significant improvements in therapeutics had they been available earlier in the United States, Dr. Gifford said.

“Two of the most potent diuretics we now have, ethacrynic acid and furosemide, were marketed in Europe fully two years before American physicians had access to them,” Dr. Gifford said. “They are the only diuretics that are effective for patients with impairment of kidney function.”

He noted that in 1963 he published the results of an investigation of a new drug, bethanidine, confirming the findings of European and Australian investigators that it has a potent and useful drug. Bethanidine was approved in the United Kingdom in 1963. Subsequently, it has become available in every other country in the world (including Canada), except the United

States! "This has led to the situation where I can prescribe bethanidine for my Canadian patients and not for my American patients."

Dr. Gifford described, as an example, the use of Sodium Nitroprusside for hypertensive crisis which appeared more than 20 years ago but was not accepted for marketing by the FDA until 1974.

"There must be something wrong with our drug regulatory system when a drug that is recognized by authorities in the field as unique and lifesaving is not made available to the practicing physician for 20 years after the first description of its potential value," he said.

The AMA witness said it was found that in approving a drug, 25 times as much paperwork was required in the U. S. as compared to England and it took twice as long to process the application here.

He urged changes in the drug laws that would provide for the HEW Secretary to allow the limited marketing of "break-through" drugs without the receipt of full efficacy data and that otherwise would speed approval.

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The AMA has told Congress the Administration's Child Health Assurance Program (CHAP) would "add further confusion to an already heavy burden of administering Medicaid laws."

William Felch, M.D., Chairman of the AMA's Council on Legislation, said different sets of rules, provider benefits, reimbursement and cost-sharing for CHAP would add to the major problems that states have in administering Medicaid. "Child Health Programs are distinct and should not be imposed upon the Medicaid program any further," Dr. Felch told the Senate Finance Subcommittee on Health.

The early and periodic screening, diagnosis and treatment (EPSDT) program would be replaced by CHAP, which would increase the number of children and pregnant women eligible for Medicaid.

Dr. Felch said there appears to be no clear understanding of the reasons for the failure of EPSDT, and no base of experience as to what effect the proposed CHAP changes might have on Medicaid and the provision of care for the children. "This legislation would introduce a major new program with distinctive needs and copious administrative requirements into a

Medicaid program already beset with complex problems."

Dr. Felch noted that child health assessments under the program could be provided only by a health care provider who entered into specific agreement with a state Medicaid agency. He said this provision is "highly undesirable and could result in differences in the availability and level of health care available to CHAP beneficiaries, as compared to health services available to others."

\* \* \* \*

Forty providers, including 18 physicians, have been barred from the Medicare-Medicaid programs as a result of their criminal convictions for abusing the programs, the Health, Education and Welfare Department has announced.

The AMA said it favors "full disclosure of the names of health care providers properly convicted of such fraud.

"The AMA is on record as favoring the vigorous prosecution and punishment of physicians who have been found guilty of defrauding the government or their patients," the AMA statement said.

A court injunction remains in effect for the HEW release of the names of providers who make \$100,000 a year or more in incomes from Medicare or Medicaid, a policy that HEW inaugurated several years ago but which drew strong protest from the AMA. HEW will now on request open its books to reveal Medicare and Medicaid income by individual physicians.

The 40 providers convicted over the past year and a half include 18 physicians, three doctors of osteopathy, six chiropractors, 10 dentists and two podiatrists. Another 16 providers, including three physicians, have been excluded from participating in Medicare either because of court convictions or findings by HEW that they have been engaged in fraudulent or abusive practices.

The names of the health care practitioners have been referred to their respective state medical licensing authorities for appropriate action.

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**REPORT OF AMA ANNUAL CONVENTION**  
**July 1979 — Chicago, Illinois**  
**By Purcell Smith, Jr., M.D.**  
**Delegate**

This summary covers the more important matters considered during the 1979 Annual Meet-



ing of the AMA House of Delegates, but it is not meant to be a complete report of all actions taken. The August 3 - August 10, 1979, issue of *AMERICAN MEDICAL NEWS* carries more complete discussion of all House actions.

#### *AWARDS:*

The recipient of the Distinguished Service Award was Dr. William A. Sodeman of Toledo, Ohio; Ann Landers, syndicated columnist from Chicago, received the Citation of a Layman for Distinguished Service; William Strauss, M.D., Boston, received the Dr. William Beaumont Award in Medicine; Charles Berry, M.D., Houston, received the Dr. Rodman E. Sheen and Thomas G. Sheen Award; Orvan W. Hess, M.D., New Haven, Conn., received the Scientific Achievement Award; and Robert Wissler, M.D., Chicago, received the Joseph B. Goldberger Award in Clinical Nutrition.

#### *ELECTIONS:*

Hoyt D. Gardner, M.D., from Louisville, Ky., (born in Paragould, Arkansas) was installed as AMA President; Robert B. Hunter, M.D., from Sedro Woolley, Wash., was elected President-Elect. Reelected to the Board of Trustees were John J. Coury, Jr., of Michigan and Frank J. Jirka, Jr., M.D., of Illinois, Hubert A. Ritter, M.D., from Missouri, and Lowell Steen from Indiana. Jack Lewis from Ohio was elected to the Board to complete the unexpired term of Dr. Hunter.

Dr. Payton Kolb of Arkansas was a candidate for a position on the Council of Constitution and Bylaws, and ran a vigorous campaign, but lost to George Collins of New York and John Hawk of South Carolina.

#### *REPORT OF THE AMA PRESIDENT:*

In his inaugural address, Hoyt Gardner, M.D., called for commitment to a "new dimension of ethics" to ensure that "forward steps in medical ingenuity are not steps backward humanly and ethically." Warning of mechanistic views that can lead to the rationing of care and the rationing of life, he said, "Technology and technique must never be allowed to overwhelm a reverence for what is human in man. And that reverence is where ethics begins. Without realizing it, we physicians can be as mechanistic in our approach to health care delivery as those people who see it as an economic pegboard. We cannot forget

that the patient's trust in us, and in our currently beleaguered profession, is based on what's in our hearts as well as what is in our heads."

#### *SUMMARY OF ACTIONS OF THE HOUSE OF DELEGATES:*

There were 262 items of business considered by the House of Delegates. Several of the major items are to be discussed in the remaining portion of this report.

#### *NATIONAL HEALTH INSURANCE:*

AMA leadership got a vote of confidence from the House of Delegates with approval of two Board of Trustees reports regarding activity on the National Health Insurance issue. The reports described efforts to carry out the principles set forth by the House in Resolution 62 six months ago. The Delegates also reaffirmed Resolution 62 and rejected seven resolutions that would have restricted AMA strategy on National Health Insurance. AMA has no bills before Congress at this time and none is being drafted.

#### *ETHICS:*

The report of the Ad Hoc Committee in the principles of Medical Ethics, containing a revision of the principles, will be distributed to state, county, and specialty societies for review and suggestions; a progress report is planned for the Interim Meeting in 1979 and a final report at the Annual Meeting of 1980.

#### *CHIROPRACTIC:*

The AMA will continue to warn the public of the hazards in entrusting the diagnosis and treatment of such diseases as essential hypertension, heart disease, stroke, cancer, diabetes and infections "to practitioners who rely upon the theory that all disease is caused by misalignment of spinal vertebrae and can be cured by manual manipulation and adjustment of the spine." A Board of Trustees report on chiropractic, asserting that the AMA knows of no scientific evidence to support spinal manipulation and adjustment as appropriate treatment for such ailments, was adopted by the House of Delegates. The report states that "it is better to call attention to the limitations of chiropractic in the treatment of particular ailments than to label chiropractic an 'unscientific cult,' since not everything a chiropractor may do when acting within the scope of a license granted by a state is necessarily without therapeutic value."

# *CONTINUING MEDICAL EDUCATION:*

The AMA is withdrawing from LCCME and will immediately resume its role as primary accreditor of CME-sponsoring organizations; this action recognizes state medical associations as accrediting bodies for local and intrastate programs.

# *ORGANIZATION:*

The House of Delegates endorsed the concept of the AMA "striving to become an umbrella organization for all physician organizations," and called on the Council on Long Range Planning and Development, in consultation with constituent and component medical associations, to study the concept of the AMA as an organization of medical organizations. It was pointed out that total membership in AMA has decreased both in absolute numbers and as a percentage of total physicians, since 1970. Consideration will be given to allowing AMA to recruit and accept members directly, but possible effects on state and county societies will be investigated first.

# *FINANCES:*

The House will be called on to consider a dues increase at the 1980 annual meeting, unless there is a dramatic increase in dues-paying members. Expenses will exceed income by 1981, though the current financial structure of the organization is sound.

# *HEALTH MAINTENANCE*

# *ORGANIZATIONS:*

Use of public funds by Department of HEW to promote the enrollment of Medicare beneficiaries in HMOs was condemned by the House of Delegates. The House adopted a resolution pointing out that the AMA encourages equal support for all forms of health care delivery, and that a recent mailing by the health care financing administration is "an arbitrary and discriminatory promotion of one type of health care delivery system over others." Actually, AMA had already protested the mailing prior to the action by the House of Delegates.

# *MISCELLANEOUS:*

1. AMA Auxiliary presented a check for \$1,622,190 to AMA Education and Research Foundation. The check was the largest ever provided by the Auxiliary and the largest ever received by AMA-ERF. Since 1952, the AMA

Auxiliary has contributed a total of almost \$32 million.

2. The two Arkansas delegates met with delegates from Missouri, Oklahoma, Kansas, Nebraska, Kentucky, and Iowa on the Saturday afternoon prior to the opening session of the House of Delegates and also again on Sunday morning. The purposes of the two meetings were to discuss some of the issues that would come up, and also to provide an opportunity to meet candidates for the various offices. It is my impression that this was a successful and worthwhile endeavor, and I would encourage continuation of this practice, rather than continuation in the Aces and Deuces Organization. A similar format is planned for the Interim 1979 meeting, probably with the addition of one or two breakfast caucuses for further discussion.

\* \* \* \*

# **COUNCIL MINUTES**

**August 5, 1979**

The Council of the Arkansas Medical Society met at 12:00 noon on Sunday, August 5, 1979, in the Camelot Inn, Little Rock. Council members present were: Burge, Andrews, Kutait, Shuffield, Crow, Osborne, Gray, J. Bell, P. Bell, Hestir, Warren, Jameson, Harris, Duncan, Mann, Williams, Lilly, Wilkins, Chudy, Wynne, Kolb, Koenig, and Saltzman. Others present included Robert Benafield, Edgar Easley, Thomas Bruce, Purcell Smith, Raymond Biondo, Stevenson Flanigan, Mrs. Frank Morgan, Mr. Glen Owens, Mr. Fred Bean, Mr. Warren, Mr. Mitchell, Mr. Cearley, Mr. Schaefer, C. C. Long, Miss Richmond, and Mr. LaMastus.

The Council transacted business as follows:

1. Mr. Fred Bean of Blue Cross-Blue Shield discussed the experience rating report for the Society's group plan, and suggested that the Council consider modifying the plan to (1) change the deductible from \$100 to \$500 and (2) offer a reduced premium to physicians under thirty-five years of age. Upon motion of Warren, the Council voted to make no changes in the plan until the present participants could be polled regarding the proposed changes.

2. Byron Hawks of the State Health Department discussed the Maternity-Infant-Child Health Program (MICH). Several members of the Council expressed dissatisfaction with the operation of the program in their areas.



3. Dr. Kutait reported on two meetings at which he had represented the Society:

(A) a meeting with Governor Clinton and Dr. Young, Director of the State Health Department; and

(B) a meeting of the Board of the American Physicians Insurance Corporation at Dallas.

4. Chairman Burge requested a report from the Budget Committee on its study of the Pension Plan for Society employees. At the request of Secretary Shuffield, individuals affected by the plan left the room.

(A) Ken Lilly, chairman of the Budget Committee, reported for his committee. Upon his motion, the Council voted to make immediate payment to National Investors Life Insurance Company the \$19,000 still outstanding on the initial liability for funding of Mr. Schaefer's retirement.

(B) Ben Saltzman reported for the Board of Trustees of the Pension Plan, presenting a recommendation that the Council consider modifying the pension plan to provide for offsetting the increase in the Society's obligation for the Consumer Price Index adjustment by applying a 66% offset of the amount of increase in social security. Upon motion of Williams, the Council delayed action on the recommendation from the Trustees until the complete report had been heard.

(C) Shuffield moved, with second by Williams, that the Council dismiss the Board of Trustees and appoint the Budget Committee as the trustees for the Pension Plan. A substitute motion was presented by Wilkins, with second by Lilly, that the trustees of the Pension Plan be instructed to meet at least annually and report back to the Council as the responsible fiduciary body of the Arkansas Medical Society, and that the present Board of Trustees be directed to draw straws for terms on the board of five-year increments so that one trustee will be placed on every five years. An amendment was proposed by Kolb to provide that a trustee would not be eligible for re-election until being off the board for one year. The amendment was accepted by

Wilkins and Lilly and the Council voted on the substitute motion as amended. Vote was by a show of hands, with 12 voting for the motion, 2 voting against and 4 abstaining.

(D) Upon motion of Williams and Wilkins, the Council then voted to accept an amendment to the Pension Plan proposed by the plan consultant and recommended by the plan Board of Trustees as stated in 4(B).

(E) Upon motion of Shuffield and Lilly, the Board of Trustees was instructed to go over the Pension Plan of the Arkansas Medical Society paragraph by paragraph and report back to the Council within six months.

5. Upon motion of Kutait, the Council voted to sponsor Mr. Warren and Mr. Mitchell in the organization of state medical society attorneys.

6. Upon motion of Duncan, the Council voted to send representatives of the Society to Washington to visit with members of Arkansas' congressional delegation.

7. Upon motion of Andrews, the Council voted to hold the 1979 winter meeting on November 18th and invite B. J. Anderson of the American Medical Association legal staff to address the meeting.

8. Executive Vice President Long presented a report on the activities of the headquarters staff pertaining to the 1979 Constitutional Convention.

9. Upon motion of Kutait, the Council voted to write the Governor requesting that he establish a committee consisting of the Director of the Health Department and representatives of the Medical School, Academy of Family Physicians, the Medical Society, and the Hospital Association to work together on health planning for Arkansas.

10. Purcell Smith, senior delegate to the American Medical Association, gave a report on the recent sessions of the AMA House of Delegates. Payton Kolb expressed his appreciation to the Council for its support in his candidacy at that meeting for a position on the Council on Constitution and Bylaws of the AMA.

The meeting adjourned at 3:30 p.m.

John P. Burge, M.D., Chairman



# keeping up

## Category 1 Continuing Medical Education Programs Available in Arkansas

### **CLINICAL AND LABORATORY ASPECTS OF POLYCLONAL AND MONOCLONAL GAMMOPATHIES**

Presented by Dr. Stephan E. Ritzmann, Professor of Pathology, University of Texas, Southwestern Medical School, and Director of the Clinical Chemistry Department, Baylor University Medical Center, Dallas, 5:00 p.m., September 18, 1979, Room S-1169 (Laboratory), St. Vincent Infirmary, Little Rock. One hour Category I credit.

### **PEDIATRIC UPDATE SEMINAR**

Presented by Dr. Donald E. Hill, Department of Pediatrics, University of Arkansas for Medical Sciences, 8:00 a.m. to 5:00 p.m., November 2, and 8:30 a.m. to 12:00 noon, November 3, 1979, Arkansas State Mental Health Services Auditorium,

Little Rock. Eleven hours Category I credit. \$50 registration fee includes luncheon on November 2nd.

### **CHRONIC PULMONARY DISEASE: DIAGNOSIS AND MANAGEMENT**

Presented by Drs. Robert J. Schramel, Clinical Professor of Surgery, Tulane University; Roger Bone, Associate Professor of Medicine, University of Arkansas for Medical Sciences; William Stead, Professor of Medicine, University of Arkansas for Medical Sciences; and Donald Nash, Ph.D., University of Texas Health Center, Tyler, Texas. 3:00 p.m. to 9:00 p.m., November 14, 1979, Master Host Inn, Texarkana, Arkansas. Sponsored by Area Health Education Center-Southwest. Four hours Category I credit. Registration fee \$12.

### **RECURRING EDUCATION PROGRAMS**

Unless otherwise indicated, programs are for one to one and one-half hours Category I credit.

#### **FAYETTEVILLE**

*Medical Teaching Conference*, every Saturday at 7:30 a.m., Washington Regional Medical Center. Sponsored by Area Health Education Center-Northwest.

#### **HOT SPRINGS**

*Arkansas State Health Department Regional Chest Conference*, second and fourth Tuesday, St. Joseph's Mercy Medical Center.

#### **JONESBORO**

*Medical Lecture Series*, first, second, and fourth Friday, 11:50 a.m., St. Bernard's Regional Medical Center. Sponsored by Area Health Education Center-Northeast.

*Interesting Cases*, second and fourth Tuesday, 11:50 a.m., St. Bernard's Regional Medical Center. Sponsored by Area Health Education Center-Northeast.

*Tumor Conference*, third Tuesday, 11:50 a.m., St. Bernard's Regional Medical Center. Sponsored by Area Health Education Center-Northeast.

*Chest Conference*, third Friday, 11:50 a.m., St. Bernard's Regional Medical Center. Sponsored by Area Health Education Center-Northeast.

#### **LITTLE ROCK — BAPTIST MEDICAL CENTER**

*Pulmonary Care Conference*, each Tuesday, 12:00 noon to 1:00 p.m., Conference Room #1.

*Central Arkansas Primary Care Conference*, second Tuesday, 7:00 p.m. to 9:00 p.m., Baptist Medical Center Auditorium. Two hours Category I credit. A meal is provided.

*Cardiopulmonary Resuscitation Course*, second Wednesday, 6:00 p.m. to 12:00 p.m., Human Resource Development area. Six hours Category I credit. A meal is provided.

*Morbidity and Mortality Conference*, first Thursday, 8:00 a.m. to 9:00 a.m., Conference Room #1.

*Surgery Conference*, each Thursday except first Thursday, 8:00 a.m. to 9:00 a.m., Conference Room #1.

*Pulmonary Up-Date Conference*, third Friday, 11:30 a.m. to 12:30 p.m., Conference Room #1. A meal is provided.

#### **LITTLE ROCK — ST. VINCENT INFIRMARY**

*Interhospital GI Problems Conference*, first Monday, 6:00 p.m.

*Peripheral Vascular Disease Conference*, second Monday, 6:00 p.m.

*Interhospital Urology Grand Rounds*, first Tuesday, 5:30 p.m.

*Neuropathology Conference*, third Tuesday, 5:00 p.m.

*Pulmonary Conference*, first and third Thursday, 12:00 noon.

*Cleft Palate Conference*, September 19, 1979, and November 21, 1979, 12:30 p.m.

As organizations accredited for continuing medical education by the Liaison Committee on Continuing Medical Education, the organizations named certify that these continuing medical education activities meet the criteria for the credit hours specified in Category I of the Physician's Recognition Award of the American Medical Association.



**LITTLE ROCK — UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES**

*Medical Grand Rounds*, each Thursday, 8:00 a.m. to 9:00 a.m., UAMS Auditorium, Education I Building.

**POCAHONTAS**

*Monthly Medical Lecture*, November 20, 1979, 7:30 p.m. Sponsored by Area Health Education Center-Northeast.

**WALNUT RIDGE**

*Monthly Medical Lecture*, October 16, 1979, 7:30 p.m. Sponsored by Area Health Education Center-Northeast.



**PERSONAL AND NEWS ITEMS**

**DR. COLCLASURE**

Dr. Joe B. Colclasure of Little Rock has been appointed to the Governor's Council on Hearing Loss. The Council will initiate a program of identifying hearing loss in newborns.

Dr. Colclasure recently addressed the Little Rock Lions Club on the identification and treatment of hearing loss.

**DR. EASLEY RETIRES**

Dr. Edgar Easley retired August 1, 1979, from his position as Deputy Director of the State Health Department.

**SOCIAL SERVICES MEDICAL DIRECTOR**

Dr. William B. Stanton of Fort Smith retired in July from his position as medical director of the Crippled Children's Section of the State Social Services Department. Dr. Stanton had worked with the agency for twenty-six years. He will continue his practice of Orthopaedics in Fort Smith.

Dr. Gilbert Buchanan, a Little Rock Pediatrician, succeeded Dr. Stanton as Medical Director.

**DR. FISER ANNOUNCES ASSOCIATES**

Dr. Robert H. Fiser, Jr., of Little Rock has announced the association of four physicians: Dr. William Collie, Pediatric Genetics; Dr. Farangis Dehkharghani, Child and Adolescent Psychiatry; Dr. Martin Fiser, Pediatric Allergy; and Dr. Fereydoun Dehkharghani, Pediatric Neurology. The physicians are located at Arkansas Children's Hospital.

**DR. RAMSAY RELOCATES**

Dr. Rex Ramsay has been named medical director of Aluminum Company of America's Arkansas Operations at Bauxite. Dr. Ramsay was formerly the director of the Arkansas State Health Department in Little Rock.

**PHYSICIANS LOCATE**

Dr. Cynthia Netherton has begun general practice at Clinton. She is a graduate of the University of Arkansas College of Medicine.

Dr. A. H. Rusher, Jr., is associated with Dr. James Drake in Jonesboro for the practice of General, Thoracic and Peripheral Vascular Surgery.

Dr. Jamie Harris has located in Hampton for the practice of medicine. Dr. Harris is a native of Canada and has just completed a tour of duty with the Canadian Armed Forces.

Dr. John Glenn Scott has opened an office in the White River Medical Arts Building at Batesville. He is a family physician.

**FAMILY PHYSICIAN OFFICERS**

At the annual meeting of the Arkansas Academy of Family Physicians in August, Dr. Mahlon Maris of Harrison was installed as president of the organization. Dr. Bruce Schratz of North Little Rock was named president-elect; Dr. Jerry Mann of Arkadelphia is the new vice president and Dr. Robert Etherington of Eureka Springs is secretary-treasurer. Mrs. Alta Good of Little Rock is Executive Secretary of the Academy.

**DR. ABERNATHY SPEAKS**

Dr. Robert Abernathy, Chief of the Infectious Disease Department of the University of Arkansas College of Medicine, addressed the Independence County Medical Society at a recent meeting. He spoke on "The Use of Aminoglycoside Antibiotics."

**DOCTOR CONTRIBUTES TO OPERA**

Dr. Ralph Wynn of Little Rock has made a donation to provide awards for the 1980 Arkansas Metropolitan Opera National Council auditions.

### DOCTOR RELOCATES

Dr. Leslie Sessions has opened an office for the practice of medicine in the new Southeast Arkansas Medical Center at Dumas. Dr. Sessions formerly practiced at Conway; he is a native of Dumas.

### PHYSICIANS ARE SPEAKERS

Drs. Richard Ridlon and Kevin Carlson of DeQueen were speakers at a meeting of the DeQueen Rotary Club. The physicians spoke on "The Health Care Gap and the Place of Family Medicine."

Dr. Scott Fergus of Osceola addressed the local Kiwanis Club on the new facilities of the Osceola Memorial Hospital.

### PHYSICIANS ESTABLISH PROTOCOL

Dr. Reggie Collum of Osceola and Dr. Herbert Jones and Dr. Sybil Hart of Blytheville partici-

pated in a recent meeting to establish procedures for treatment at local hospitals of rape victims. Dr. Hart and Dr. W. W. Workman assisted in the drafting of the policy statement.

### RACE PHYSICIAN

Dr. James David Busby of Fort Smith is an avid race enthusiast. His article on "Racing Fever" (A Medical Analysis) appears in the August 1979 issue of *Stock Car Racing*. Another article by Dr. Busby, "Safety, I Know What I'm Talking About" will be published in a subsequent issue of the magazine; the article covers an accident at Tri-State Speedway in which Dr. Busby was injured.

Dr. Busby presented results of research at a meeting of the Mid-America Race Physicians in August in connection with a 500 mile LeMans Race in Ohio.



### NEW MEMBERS

#### DR. KEVIN R. CARLSON

Dr. Carlson is a new member of the Sevier County Medical Society. He was born in Houston and attended Texas A. & M. University for his pre-medical education. In 1976 he was graduated from the University of Texas Medical Branch at Galveston. Dr. Carlson completed a family practice residency at the University of Arkansas College of Medicine. He was chief resident in the Department of Family and Community Medicine at the University of Arkansas Hospital in 1978-79.

Dr. Carlson is a member of the Academy of Family Physicians and has taken the Family Practice board examination.

Dr. Carlson is associated with Dr. Richard

Ridlon at North Fourth and Heynecker Streets, DeQueen.

#### DR. ROBERT BASCOM WHITE

Dr. White is a new member of the Greene-Clay County Medical Society. He is a native of Louisiana. He received a B.A. in Chemistry from Hendrix College in 1972. In 1976, he was graduated from the University of Arkansas College of Medicine. Dr. White interned at the University and Veterans Administration Hospitals in Little Rock and also completed a residency in Internal Medicine at those institutions.

Dr. White is in general Internal Medicine at the Paragould Medical Center, One Medical Drive.

\* \* \* \*

The Craighead-Poinsett County Medical Society has added three new members to its membership roll. They are:

#### DR. JAMES E. DRAKE

Dr. Drake is a general surgeon with offices at 809 Cobb Street in Jonesboro. Dr. Drake was born in Oklahoma and attended the University of Oklahoma. He received a B.S. degree in 1968 and a medical degree in 1972. Dr. Drake interned at St. Francis Hospital in Wichita, Kansas, and remained at the same institution for residency training.



## NEW MEMBERS

Dr. Drake is board certified in Surgery and is a member of the American College of Surgeons.

### **DR. ALBERT H. RUSHER, JR.**

Dr. Rusher is also in the practice of general surgery at 809 Cobb Street in Jonesboro. He is a native of Brinkley and attended the University of Arkansas. He received a B.A. degree at the Fayetteville Campus in 1969 and was graduated from the College of Medicine at Little Rock in 1973. Dr. Rusher interned at John Peter Smith Hospital in Fort Worth and completed residency training at the Baylor University Medical Center in Dallas.

### **DR. GARY S. SAPIRO**

Dr. Sapiro is a native of New Brunswick, New Jersey. His pre-medical education was at Catawba College in Salisbury, North Carolina (B.S. Cum Laude in 1960). He was graduated from the Bowman Gray School of Medicine in Winston-Salem, North Carolina, in 1964. His internship was at Albert Einstein Medical Center in Philadelphia. Dr. Sapiro was at Philadelphia General Hospital for a general surgery residency and a general psychiatry residency. He then completed three years of residency training in Neurological Surgery at the University of Pittsburgh Health Center Hospitals. In 1970-71 he was Chief resident in Neurological Surgery at Presbyterian University and Children's Hospital of Pittsburgh.

Dr. Sapiro was in the private practice of Neurological Surgery at Cheyenne, Wyoming, from 1971 to 1977. From 1977 to 1979, he was associated with the Neurological Section of the Guthrie Clinic in Sayre, Pennsylvania. Dr. Sapiro moved to Jonesboro in June 1979 for the private practice of Neurological Surgery.

Dr. Sapiro is a member of the Congress of Neurological Surgeons and the Mid-Atlantic Neurosurgical Society.

Dr. Sapiro's office is at 223 East Jackson Street in Jonesboro.

\* \* \* \*

The Pulaski County Medical Society has added eleven active members to its roll:

### **DR. JERALD B. BRENOWITZ**

Dr. Brenowitz is a native of New York. He attended Stuyvenant High School in New York City and received a B.A. degree from John Hopkins University in Baltimore in 1967. He was graduated from the New York University School of Medicine in New York City in 1971. His

internship was at New York University-Bellevue and he also was in residency training in General Surgery at the same institution from 1972 to 1974. Dr. Brenowitz then had two years of residency in surgery at the University of New Mexico at Albuquerque. He was certified by the American Board of Surgery in 1978.

Dr. Brenowitz is in the practice of Thoracic and Cardiovascular Surgery at 200 Medical Towers Building, Little Rock.

### **DR. JOE LEE BURFORD**

Dr. Burford is a native Arkansan. He received a B.A. degree from the University at Fayetteville in 1974 and was graduated from the College of Medicine in Little Rock in 1978. His internship was at St. Vincent Infirmary, Little Rock.

Dr. Burford is in the general practice of medicine at 1801 Maple in North Little Rock.

### **DR. WILLIAM J. BYRNE**

Dr. Byrne is a Gastroenterologist associated with Arkansas Children's Hospital at 804 Wolfe Street in Little Rock.

He was born in Cleveland, Ohio, and attended high school in South Euclid, Ohio. He received a B.A. degree from Ohio Wesleyan University and a M.D. degree from Ohio State University College of Medicine. His internship was at the University of California at Los Angeles and he served a residency in Pediatrics at the same institution. He is a member of the Los Angeles Pediatric Society and the American Society for Enteral and Parenteral Nutrition.

### **DR. JOHN L. DAUGHERTY**

Dr. Daugherty is a native of Little Rock. He attended Central High School in Little Rock and the University of Arkansas at Fayetteville. His M.D. degree was received from the University Medical School at Little Rock in 1978. Dr. Daugherty completed a family practice residency at the University Medical Center Campus in June 1979.

Dr. Daugherty is in general practice at 112 North Bailey in Jacksonville.

### **DR. KENNETH G. GOSS**

Dr. Goss is Professor and Chairman of the Department of Family and Community Medicine at the University of Arkansas College of Medicine. His office address is 1700 West 13th Street, Little Rock.

Dr. Goss is a native of New York City. He attended Alfred University in New York and the University of Rochester School of Medicine and

Dentistry. His M.D. degree was received in 1952. Dr. Goss interned at Strong Memorial Hospital in Rochester. He was certified by the American Board of Family Practice in 1971 and recertified in 1977.

Dr. Goss was in practice in Rochester, New York, from 1953 to 1960 and in New Canaan, Connecticut, in 1963-64. He is a member of the Society of Teachers of Family Medicine, American Academy of Family Physicians, Arkansas Academy of Family Physicians, North American Primary Care Research Group, American Geriatrics Society, and the Gerontological Society.

**DR. JAMES R. McNAIR**

Dr. McNair's office is in Suite 800 in the Doctor's Building, 500 South University, Little Rock. His specialty is preventive medicine.

Dr. McNair was born in Little Rock and attended Hall High School. His pre-medical education was at the University of Arkansas in Fayetteville. His M.D. degree was received in 1968 from the University Medical School in Little Rock. Dr. McNair interned at San Francisco General Hospital and completed a residency in Ophthalmology at the University of Arkansas Medical Sciences Campus in 1975. He was certified by the American Board of Ophthalmology in 1976.

Dr. McNair practiced in Rogers for three years before locating in Little Rock. He is a member of the American Association of Ophthalmologists.

**DR. JAMES A. METRAILER**

Dr. Metrailer is a native of Little Rock and attended Catholic High School in that city. He was graduated from the University of Arkansas at Fayetteville in 1972 with a B.A. degree. In 1976 he received his M.D. degree from the University of Arkansas College of Medicine at Little Rock. He completed an internship and residency in Internal Medicine at the University of Arkansas for Medical Sciences Campus in Little Rock.

Dr. Metrailer's office address is 10121 North Rodney Parham in Little Rock.

**DR. THOMAS E. PAULUS**

Dr. Paulus was born in Little Rock. He attended high school in Warren and received a B.A. degree from Hendrix College in 1971. Dr. Paulus was graduated from the University of Arkansas College of Medicine in 1976. He interned at the University Hospital and was in residency training at University Hospital and the

Arkansas Children's Hospital. He is a candidate member of the American Academy of Pediatrics.

Dr. Paulus practices Pediatrics with offices in Suite 302 of the Doctor's Building, 500 South University, Little Rock.

**DR. MICHAEL T. PILCHER**

A native of Little Rock, Dr. Pilcher attended Catholic High in that city. He received a B.S. from the University of Arkansas at Little Rock in 1969 and was graduated from the University of Arkansas College of Medicine in 1973. His internship and residency in Internal Medicine were also at the University for Medical Sciences Campus in Little Rock.

Dr. Pilcher is a member of the American College of Physicians and the American Academy of Family Physicians.

Dr. Pilcher's office for the practice of Internal Medicine is at 2500 McCain Boulevard (Suite 219), North Little Rock.

**DR. WALT STALLINGS**

Dr. Stallings was born in Little Rock and attended high school at Morrilton. He received a B.A. degree from Hendrix College in 1970 and was graduated from the University of Arkansas College of Medicine in 1974. Dr. Stallings' internship and residency training in Urology were at the University of Arkansas Medical Sciences Campus.

Dr. Stallings is in offices at Suite 316 of the Doctors Building, 500 South University, Little Rock.

**DR. STEPHEN T. TICARIC**

A native of Beaumont, Texas, Dr. Ticaric attended high school in that city. For his pre-medical education, he attended Vanderbilt University. He was graduated from the University of Texas Southwestern Medical School at Dallas in 1974. He interned and completed a residency in Internal Medicine at Vanderbilt Hospitals. He also had a Cardiology Fellowship at Vanderbilt.

Dr. Ticaric is certified by the American Board of Internal Medicine. He is an affiliate member of the American College of Physicians and the American College of Cardiology.

Dr. Ticaric practices Cardiology at 440 Parkview Medical Building, #1 St. Vincent Circle in Little Rock.

\* \* \* \*



## NEW MEMBERS

The Pulaski County Medical Society has also added a number of courtesy members to its roll:

### **DR. ROBERT E. BURNS**

Dr. Burns is a native of El Dorado and a graduate of the University of Arkansas College of Medicine. He is a Family Practice resident at the University of Arkansas for Medical Sciences Campus in Little Rock.

### **DR. FREDERICO C. deMIRANDA**

Dr. deMiranda was born in Cuba. He is a graduate of the University of Arkansas College of Medicine and is currently a Pediatrics resident at the Medical Sciences Campus in Little Rock.

### **DR. GREGORY R. ELLIOTT**

A native of Paragould, Dr. Elliott is a graduate of the University of Arkansas College of Medicine. He is a resident in Pediatrics at the University Hospital and the Arkansas Children's Hospital.

### **DR. JIM FULLER**

Dr. Fuller is a Radiology resident at the Medical Sciences Campus in Little Rock. He is a

native of Nashville and a graduate of the University of Arkansas College of Medicine.

### **DR. RICHARD F. JACOBS**

Dr. Jacobs, a native of Arkadelphia, is a Pediatrics resident at the University of Arkansas for Medical Sciences Campus. He is a graduate of the University Medical School.

### **DR. NITA OGLESBY**

Dr. Oglesby is in the Family Practice residency program at the University of Arkansas for Medical Sciences. She is a native of Conway and a graduate of the University College of Medicine.

### **DR. RICHARD STEVENSON**

Dr. Stevenson is a graduate of the University of Arkansas College of Medicine. He is a native of Craighead County. Dr. Stevenson is in a surgery residency at the Medical Center in Little Rock.

\* \* \* \*

The Washington County Medical Society has also added an intern to its roll of members. Dr. Geoffrey L. Dunaway, a native of Conway, is a Family Practice resident with the AHEC program at Fayetteville.



## THINGS TO COME

### **HUNTINGTON'S DISEASE UPDATE: CURRENT CLINICAL AND SCIENTIFIC ADVANCES**

October 6, 1979

The University of Texas Medical School  
6431 Fannin, Houston, Texas

Presented by: The University of Texas Medical School, Department of Neurology and Department of Neurobiology and Anatomy and The University of Texas Health Science Center at Houston, Division of Continuing Education.

Fee: \$60.00.

Contact: The University of Texas Health Science Center at Houston, Division of Continuing Education, P. O. Box 20367, Houston, Texas 77025. (713) 792-4671.

Accreditation: This course meets the criteria for 7 credit hours in Category 1 of the Physician's Recognition Award of the American Medical Association and for 7 Prescribed credit hours for the American Academy of Family Physicians

\* \* \* \*

### **NOVEMBER 1979**

The University of Mississippi Medical Center at Jackson will sponsor a two-day Perinatal Postgraduate Course November 1-2, 1979. The program will include sessions on perinatal risking, management of the pregnant diabetic, organization of immediate newborn care, stabilizing the critically ill newborn and intrapartum anesthesia and analgesia. The course fee for physicians is \$120. 13 Category I credit hours.

The University of Mississippi Medical Center will also sponsor a Pediatric Neurosurgery seminar on November 16. The course will review recent advances in the evaluation and management of pediatric patients with neurological problems. Fee \$50, 5.5 contact hours credit.

For information on either course, contact Divi-

sion of Continuing Health Professional Education, University of Mississippi Medical Center, 2500 North State Street, Jackson, Mississippi 39216.

**FEBRUARY 1980**

The 69th annual meeting of the United States-Canadian Division of the International Academy of Pathology will be held at the Hyatt Regency in New Orleans February 25-29, 1980.

A comprehensive program on Perinatal Disease

will be presented in connection with the annual meeting. The course is scheduled for February 27.

For further information, contact Dr. Nathan Kaufman, Secretary-Treasurer of the Academy, 1003 Chafee Avenue, August, Georgia 30904.

**APRIL 1980**

The annual meeting of the Arkansas Medical Society will be held April 20-23, 1980, in the Arlington Hotel, Hot Springs.





# Opportunities to Practice Medicine in Arkansas

**BEARDEN.** Population 1,300 trade area population 4,000. The town is without a physician. The nearest physicians are located approximately 15 miles away in Camden and Fordyce. Camden has a 166-bed hospital and Fordyce has an 80-bed hospital. There is one fully equipped ambulance and four emergency medical technicians in Bearden, as well as a pharmacy and a registered pharmacist. Office space for two physicians is available.

**FORDYCE.** Population approximately 5,500; trade area population is around 18,000. Fordyce is located 68 miles from Little Rock, 40 miles from Pine Bluff, and 31 miles from Camden. Opportunity exists for family physician to locate in the town and share office building one block from hospital with another family physician. Other office space is available. The town has a 51-bed general hospital and two skilled nursing homes. Four family physicians currently practice in Fordyce.

**McGEHEE.** Population about 5,500; trade area population approximately 18,000. Opportunity for general surgeon and obstetrician-gynecologist. There are currently four family physicians in the community and another is scheduled to begin practice in 1980. Clinic space is available and financial arrangements include either a salary or partnership agreement. McGehee has a 34-bed general hospital, which is Joint Commission approved.

**DeQUEEN.** DeQueen serves as center of trade area and medical center for three Arkansas counties and one southeastern Oklahoma county. Approximately 60,000 people live in the four-county area, all within an hour's drive of DeQueen. Openings for family physician, obstetrician-gynecologist and pediatrician with clinic. The clinic is located adjacent to the hospital in a new building consisting of 12,000 square feet and containing complete laboratory and x-ray facilities. The clinic has a full time administrator and is also serviced by its own in-house computer. Excellent benefits, including a profit sharing pension plan.

**MAGNOLIA.** Population 11,527; county population 25,900. Family practice clinic urgently needs two additional physicians. The two physicians practicing at the clinic are age 35 and 48. Nine family physicians, one radiologist, and two surgeons now practice in Magnolia. The 100-bed hospital is being enlarged by 60 beds, and there are two I.C.F nursing homes with a total bed capacity of 245.

**DeVALLS BLUFF.** Population approximately 800; trade area population 3,500. There is no practicing physician in the community. The nearest physicians are in Brinkley, 18 miles away.

**HOT SPRINGS.** Population 38,000; population of service area 130,000. Presently, the following specialties are not available and are needed in the community: oncology, hematology and pulmonary specialists. Opportunities also exist in the following areas: general surgery, internal medicine, and neurology.

**BLYTHEVILLE.** Population approximately 26,000; trade area population is between 70,000 to 100,000. Opportunities in Blytheville for obstetricians-gynecologists, pediatricians, orthopaedic surgeons, general surgeons, family practitioners, ophthalmologists. A new 160-bed hospital with all private rooms was completed in November 1977. Can either join a group of six practicing physicians or go into solo practice.

**MARIANNA.** Population 6,100; trade area population 18,000 to 20,000. There is a desperate need for two or three more physicians (family practitioners and a general surgeon) to help alleviate the health care demands. Three physicians have office space readily available. There is a 25-bed hospital in the community with complete services available in most every area of patient care. Marianna is 60 miles from Memphis and 100 miles from Little Rock.

For further information on these and other opportunities contact

**PHYSICIAN PLACEMENT SERVICE  
ARKANSAS MEDICAL SOCIETY**

Post Office Box 1208

Fort Smith, Arkansas 72902

October, 1979

# THE JOURNAL OF THE

# Arkansas MEDICAL SOCIETY

Vol. 76 No. 5

FORT SMITH, ARKANSAS

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**Before prescribing, please consult complete product information, a summary of which follows:**

**Indications:** Relief of anxiety and tension occurring alone or accompanying various disease states. Efficacy beyond four months not established by systematic clinical studies. Periodic reassessment of therapy recommended.

**Contraindications:** Patients with known hypersensitivity to the drug.

**Warnings:** Warn patients that mental and/or physical abilities required for tasks such as driving or operating machinery may be impaired, as may be mental alertness in children, and that concomitant use with alcohol or CNS depressants may have an additive effect. Though physical and psychological dependence have rarely been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions), following discontinuation of the drug and similar to those seen with barbiturates, have been reported.

**Usage in Pregnancy:** Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malforma-

tions as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

**Precautions:** In the elderly and debilitated, and in children over six, limit to smallest effective dosage (initially 10 mg or less per day) to preclude ataxia or oversedation, increasing gradually as needed and tolerated. Not recommended in children under six. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (e.g., excitement, stimulation and acute rage) have been reported in psychiatric patients and hyperactive aggressive children. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically.

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SCIENTIFIC ARTICLES

Felty's Syndrome	195
<i>R. B. Lewis, M.D.</i>	
Case History of Acute Schizophrenia	197
<i>Terrell Bishop, M.D.</i>	
Medical Grand Rounds: "Vasculitis"	203
<i>Eleanor A. Lipsmeyer, M.D.</i>	

FEATURES

Pediatric Review: "Transient Diabetes Mellitus Secondary To Diphenylhydantoin Intoxication"	209
<i>Phyllis E. Stansell,</i> <i>Heinrich K. Schedewie,</i> <i>M. Joycelyn Elders,</i> <i>Robert H. Fiser, Jr.,</i> <i>John H. Bornhofen, and</i> <i>Veronica O. MacLeod</i>	
Office Orthopaedics: "Growth Plate Fractures at the Knee and Ankle"	211
<i>H. Austin Grimes, M.D.</i>	
ECG of the Month	217
<i>John Watson, M.D.</i>	
Editorial: "Myocardial Infarction"	218
<i>Alfred Kahn, Jr., M.D.</i>	
Medicine in the News	219
Things to Come	222
Keeping Up	223
Personal and News Items	224
New Members	226

## Felty's Syndrome

R. B. Lewis, M.D.\*

Rheumatoid arthritis is a chronic disease of unknown etiology affecting the joints symmetrically. There are, however, serious systemic manifestations which must be watched for and usually require aggressive therapy.

Felty's syndrome, defined as rheumatoid arthritis (RA), splenomegaly and leukopenia, is one of these extra-articular manifestations. We report here three patients in our hospital at the same time with this relatively unusual manifestation.

1) H. R. is a 70 y/o WM with a 10 year history of joint problems. In 1967 he had noted the gradual onset of pain with stiffness especially in the morning involving the hands, both knees and ankles. He was treated conservatively and had slow progression of his disease until he ceased employment two years later. He continued to be ambulatory, however. One year ago he developed malaise, weakness, epistaxis and dizziness. Hospitalization at another hospital revealed a hematocrit of 18 with 1,000 WBC, 77% lymphs and 2% polys. He was given three units of whole blood and transferred to our hospital where the hematologic findings were confirmed except for an increased hematocrit of 28%. PE revealed changes of chronic RA and an enlarged spleen. All his medications were stopped. He was discharged on Tylenol.

Over the past year his synovitis has progressively worsened until the past month PTA he became unable to ambulate and bilateral knee swelling was noted. He was readmitted for further therapy.

PE: Pertinent findings are, the spleen is palpable 8 cm below left costal margin and the joints show chronic changes of RA with small knee effusion bilaterally. PIP-MCP-wrists, elbows, shoulders, knees and ankles are tender to palpation. (Olecranon nodules are present.) Lab values reveal WBC 1.3 with 34 polys, hematocrit

31%. He was restarted on salicylate therapy and is slowly improving.

2) H. L. B. is a 58 y/o WM with a diagnosis of RA in 1970 based on hand and foot swelling, a.m. stiffness, and positive RA factor (1:1280). He was treated conservatively and did well until April 1976 when he developed weight loss and pancytopenia. A splenectomy was done which revealed increased plasma cells as did a lymph node biopsy. A bone marrow revealed ten percent plasma cells. Lytic lesions consistent with myeloma were seen on skull x-ray. He was treated with Adriamycin, Vincristine and VCNU. Therapy was discontinued because of neutropenia. A bone marrow seven months later revealed no evidence of myeloma.

He was readmitted August 1977 with a right intraclavicular staphylococcal abscess. Physical exam now revealed the large 6 x 8 cm abscess on the right shoulder and chronic changes of RA. No synovitis was noted at this time. His WBC was 5,700 with 94 lymphocytes and no polys. He was treated initially with nafcillin and soaks. Gentamicin was added. Over an eight week period, his abscess healed.

Because of his absent polys, lithium carbonate was tried, but he developed inappropriate ADH syndrome and blood levels of 1 mEq/l were not obtained. His peripheral granulocyte count was not affected. Bone marrow examination did not reveal evidence of myeloma. Rather it showed maturation arrest and eosinophilia. He is presently being studied for antibodies to his granulocytes.<sup>2</sup>

3) R. E. S. is a 64 y/o WM with a two year history of RA which began with involvement of hands, feet, knees, wrists and elbows. He also developed subcutaneous nodules. He was followed by his local physician who treated him with aspirin and 5 mg prednisone every other day. A diagnosis of Felty's syndrome was made

\*Veterans Administration Hospital, Little Rock, Arkansas 72206.



on the basis of enlarged spleen and WBC less than 4,000.

He is admitted now by ophthalmology for right cataract extraction and seen by rheumatology because of a draining olecranon nodule on the left elbow. PE reveals healed malleoli ulcers bilaterally, post MTP head resections, as well as severe subluxation and ulnar deviation of the hands. Subcutaneous nodules are present on the proximal ulnar areas. The spleen is not palpable. The WBC is 2.9.

The above three cases have been briefly presented to point out the spectrum of abnormalities and therapies seen in Felty's syndrome. The first patient still has active arthritis. He developed a pancytopenia, such that he required transfusions; interestingly, he has maintained his hematocrit post transfusion. The second patient is fascinating because of his apparent myeloma<sup>4</sup> which later could not be substantiated. He developed a severe infection following splenic removal and although his WBC has increased, he has few if any circulating granulocytes. The third patient illustrates the vasculitis with leg ulcers that may develop in these patients<sup>3</sup> and which, along with recurrent infections are the usually accepted reasons for doing a splenectomy.

Note that all patients had definite rheumatoid arthritis for several years. Lithium carbonate<sup>6</sup>

was tried in one of our patients. It is too early to tell if we will get a granulocytic response. My own personal experience has not been good, but the number of patients has been small.

We have seen two young women with Felty's syndrome, very active arthritis of recent onset, so that the syndrome is not always seen in people with old, chronic deformities.

#### SUMMARY

Three patients have been briefly presented to illustrate the spectrum of Felty's syndrome as well as its response to treatment and complications of therapy.

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# Case History of Acute Schizophrenia

Terrell Bishop, M.D.

Arkansas requires a licensed, practicing physician to evaluate those persons deemed by others to be in need of commitment for psychiatric treatment. Most such cases are transported to beleaguered primary care physicians who develop a practical skill at mental diagnosis through frequent contact with such patients. The following case is presented for the further understanding of the acute schizophrenic break.

Family members come with examples of disruption of life style and character traits rather than descriptions of examples of Bleuler's four A's—of chaotic loosening of thought Associations, endogenous Autism with loss of contact with reality (such as delusions), inappropriate or flat Affect, and Ambivalent attitudes. Therefore, common everyday descriptions of these patients by their family must be translated into the diagnostic criteria of psychiatry.

The following description of a schizophrenic patient may give insight into the type history that could be expected. Parts of the history were obtained from the patient after the acute episodes subsided; of course, most histories are not so distinct. If the family were psychiatrically trained and if the patient were more able to cooperate then more typical histories could be obtained. Be aware that often the patient is deliberately hiding his symptoms.

Mr. X is the fourth of six children whose father was disabled from war injuries and tuberculosis. He was afraid of his father who paid him little attention. He was reared by a sister seven years his elder who taught him to dance and played dolls with him. The family was poor. His mother worked and whenever present she served as a taskmaker. His sisters won beauty contests causing Mr. X to feel jealous. Insomnia and enuresis have been life-long problems.

Early recollections include the birth of his younger brother when he was two and one-half years old. He also remembers his father's anxiety at his mother's spontaneous abortion. From age nine work was strenuous, especially after an elder brother ran away. He was quiet and bashful to the extent of being thought of as a sissy by his father. His mother was his teacher till the third grade. A heavy blow was dealt to him at age 17 with the death of his father. Thereafter, he

seemed to be unable to decide what he wanted to do.

He began dating as a high school senior. Ethanol abuse started at age 19 in college where he was a fraternity member majoring in merchant engineering. At age 20, he quit college out of boredom and worked at his mother's store before being drafted. After 16 years in the military, including time as a communications technician, he no longer felt it was a challenge and lost interest as had been his pattern throughout life. Two marriages broke up between ages 20 and 30 with five children being produced. After leaving the military, he was a jack-of-all-trades including jobs as an electronics engineer in a metallurgy plant and as an auto salesman. He married a third time and continued to drift from one job to another.

In 1977, an ill-conceived business venture failed with associated financial loss. He gradually settled into doing nothing. He no longer worked and one month prior to admission he stopped bathing and shaving, resigned to sitting in his chair all day. His lethargy increased. He was searching for a purpose he said. While reading a work on ancient mysteries he realized the only thing they had in common was God. An experience occurred, as he described it, in which he lost control of his body. His legs gave way and a supernatural force shoved him into a chair. When he walked away, the force propelled him into the center of his living room oriental rug. Thoughts were injected into his mind so that he understood everything. As the force was gentle, he placed himself into an open-minded state so as to receive guidance. He gave thanks for enlightenment by holding his Bible up to flashing lights. These lights later led him in a divine manner by going from dim to bright. He believed people should know his thoughts because he knew a lot of ESP goes on in life. He felt elated at the revelation, but he felt like destroying. He also knew his wife had been his sister four generations earlier.

Going into a frenzy, he placed things in their ordained place. He informed his wife that everything would be all right if she followed exactly what he said. Lights continued to lead him through the strange halls of the hospital. He



# CASE HISTORY OF ACUTE SCHIZOPHRENIA

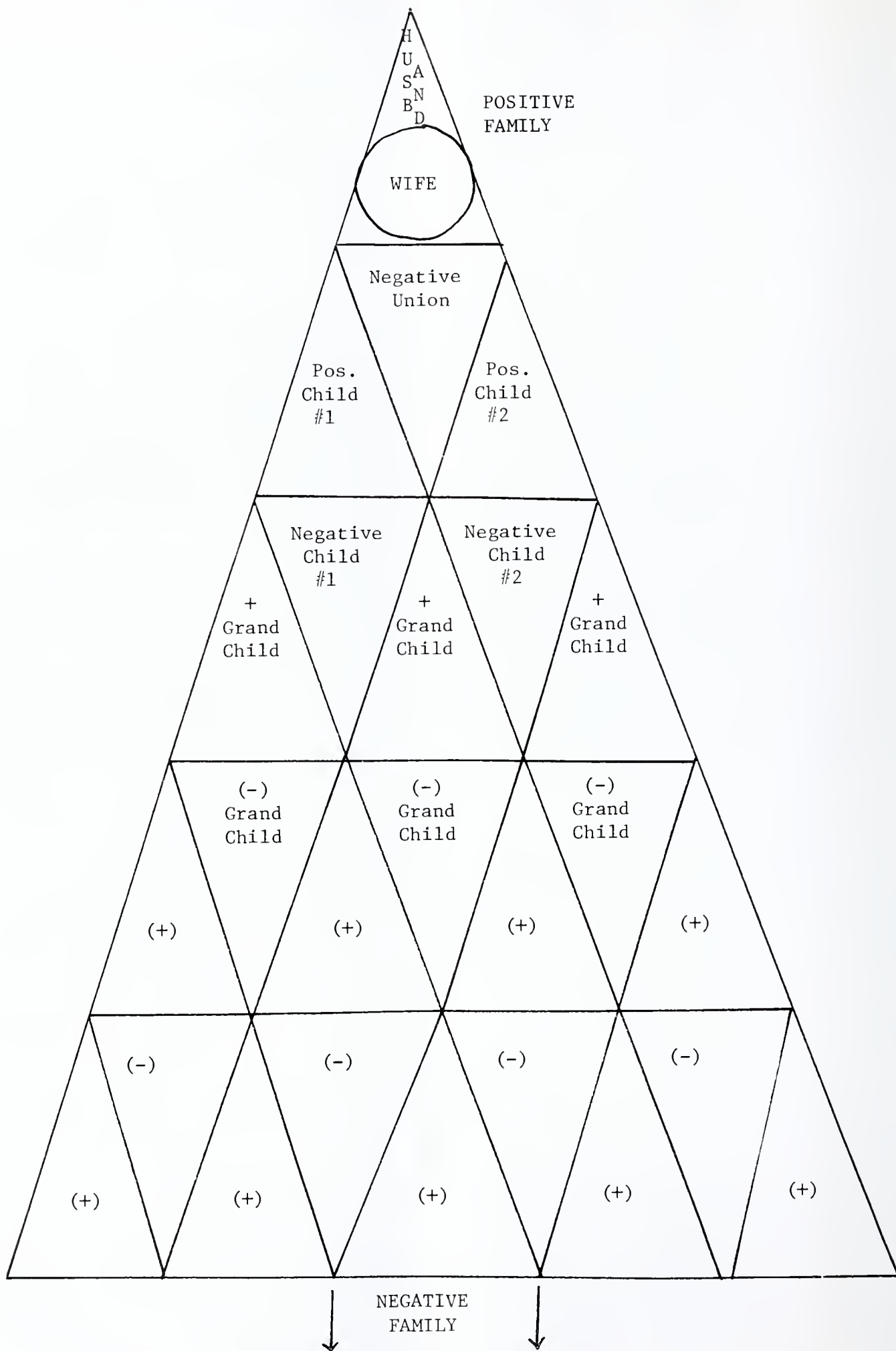


FIGURE 1.  
The pyramids point either to the positive or the negative. Family relationships have been superimposed.

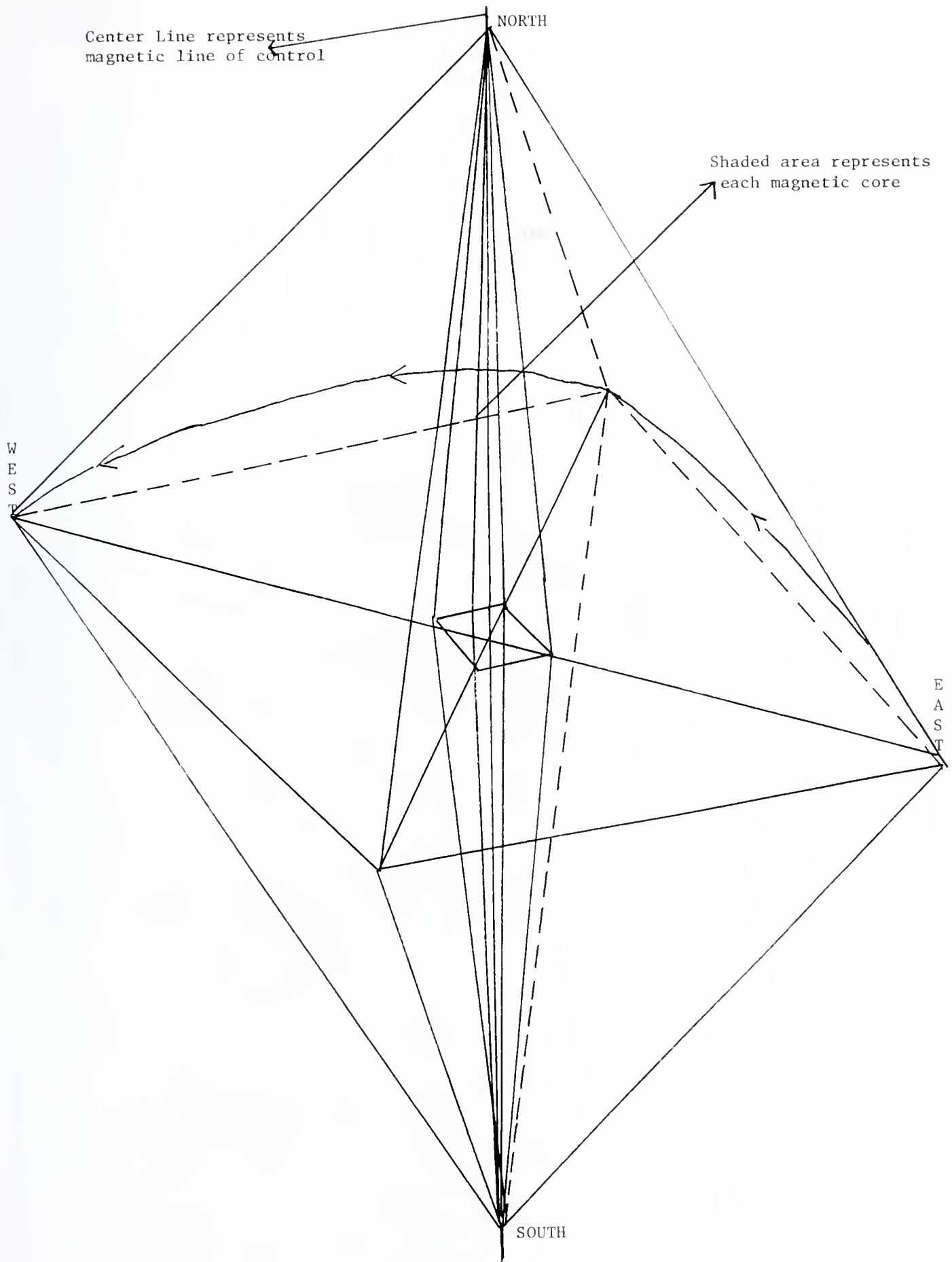


FIGURE 2.  
This graph is the patient's concept of the divine order of the earth.



then saw the hands of a clock move backwards to signal a new era. At that time he had solved the remaining enigmas of Einstein's theory of relativity by applying formulae based on pyramids. These could solve all problems. He knew others were also searching; he got papers out of the trash can and reconstructed things. His only familiar things were his cigarettes and his Bible which he kept close to himself.

Upon psychiatric examination, he was found to have grandiosity to such an extent that he thought he could predict what the interviewer would next ask. He therefore answered before being asked. He was pleasant and helpful to others. He was initially thought to have mild euphoria but, in retrospect, it appears more appropriate to call his affect one of self-satisfaction arising from his grandiosity. He never experienced auditory hallucinations as do most schizophrenics. His delusions were grandiose without any trace of paranoia. His looseness of association was marked in that he changed topics from one sentence to the next without any connection or continuity. His affect was stable. His MMPI showed a very rare profile that was not consistent with any of the standard profiles. His scales for somatization and mania were elevated without other deviations such as the paranoia or schizophrenic scales. The patient was never hyperactive or troublesome to anyone on the ward. He and his family denied any previous depression or elation. The following studies were normal: electrolytes, vital signs, EEG, lumbar puncture, T<sub>3</sub> T<sub>4</sub>, ANA, drug screen and brain scan. He responded somewhat to low dose anti-psychotic medication that was started before final diagnosis was decided. He eloped and actually won several hundred dollars at the horse races by using his formulae.

In the following three months, he learned not to talk of his delusions which became encapsulated. Medicine was refused. He entered church work. His MMPI remained unchanged and his wife filed for divorce as he was unimproved (although she refused to commit him). Consequently, his morning sickness of many years worsened. Meanwhile, he returned as a walk-in patient and gave much of the preceding data and the graphs that accompany this article.

He is a case of schizophrenia and specifically paranoid schizophrenia. Paranoid schizophrenia is diagnosed by the presence of delusions of either

paranoid or grandiose nature, without the great personality decompensation of the other types of schizophrenia. Often paranoid schizophrenias have great religiosity as in this case.

Great diagnostic weight can be given to his decreased hygiene and his giving up on useful endeavors. His revelation and subsequent control by an unknown force is almost diagnostic. The subsequent delusions to explain reality with his own private logic are characteristic. It is interesting dynamically to correspond his early life and his statements concerning his reincarnated sister, etc. Finally, the consequences of lack of treatment and lack of cooperation by family members can be seen by his pending divorce. Unfortunately, he remained untreated; but, this gives us the opportunity to see how his delusional system became encapsulated as evidenced by his graphs that were produced in June, although labeled March 1, 1978.

This case aside, what symptoms can be expected to be present when the schizophrenic patient is brought for examination? Much confusion exists on criteria for diagnosis. Patients with classical case histories are hard to find and different symptom constellations are diagnosed differently from psychiatrist to psychiatrist. The standard criteria are from Bleuler and Schneider and it is self-evident that neither set of criteria is full proof, as such a situation would result in the extinction of the other.

Bleuler, in addition to his fundamental symptoms (4 A's), delineated accessory schizophrenic symptoms of sensory illusions, hallucinations, delusions, ideas of reference (one's belief of being talked about), negativism, echopraxias, echolalia, automatism, stereotypes, alien feelings inside, unusual mannerisms, impulsiveness and malaise of psychic functions (numbing).<sup>1</sup>

Schneider attempted to find pathognomonic symptoms. His first-rank symptoms are: hearing voices speak one's thoughts aloud, hearing one's activity described by voices, hearing voices discuss oneself, having thoughts placed or taken out of one's mind by some force, having delusions, having one's thoughts mysteriously known by others, and having sensations, emotions or actions forced upon the recipient by others.<sup>2</sup> Second-rank symptoms are non-auditory hallucinations, confusion and perplexity and affect disorders.<sup>3</sup>

The World Health Organization has set forth

the most frequently reported symptoms and their degree of reliability. The most reliable symptoms were the ones reported by the patient. The least reliable were observed behavior. The most common (>45%) symptoms were auditory hallucinations, flat affect, delusions or control by others

or some outside force and alienation of thought. Auditory hallucinations and thoughts of control are about 90% reliable. Flatness of affect is unreliable as interviewers cannot agree as to its presence (reliable when definitely present). Neologisms, catalepsy, stereotypes and other classic

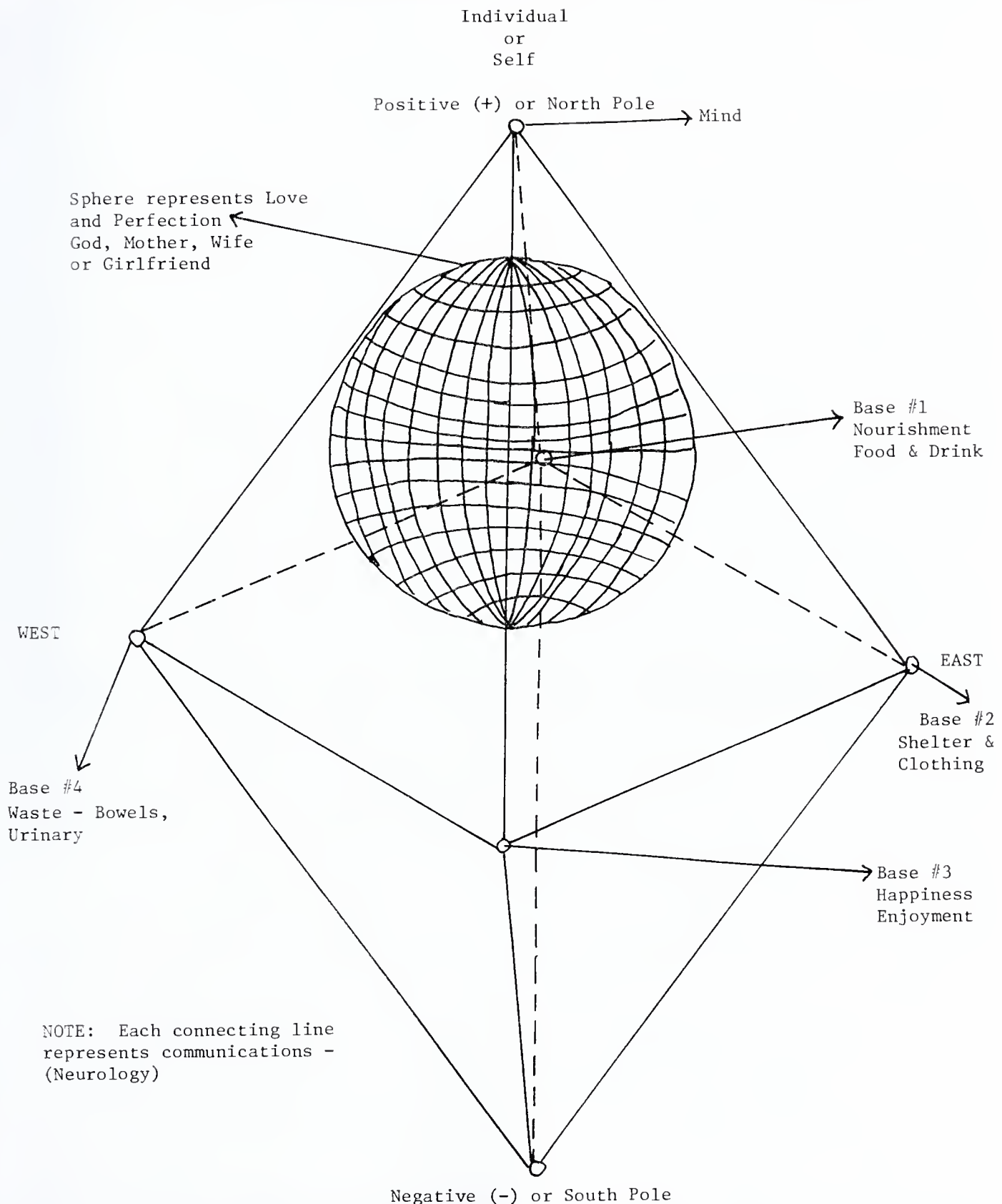


FIGURE 3.

Basic issues are depicted. Necessities of life, security, happiness, and the disagreeable portions of life are bases upon which love and perfection (with God and mother) rest. The patient states that all these issues are connected.



CASE HISTORY OF ACUTE SCHIZOPHRENIA

symptoms are highly reliable but rare except in backward patients.<sup>4</sup>

In conclusion, other noteworthy points to consider are related to life-style mentioned earlier. Many schizophrenics are known for many years previous to psychotic break to have been unable to relate to people, unable to keep a job, withdrawn, weird, sexually retarded and unhappy with life.

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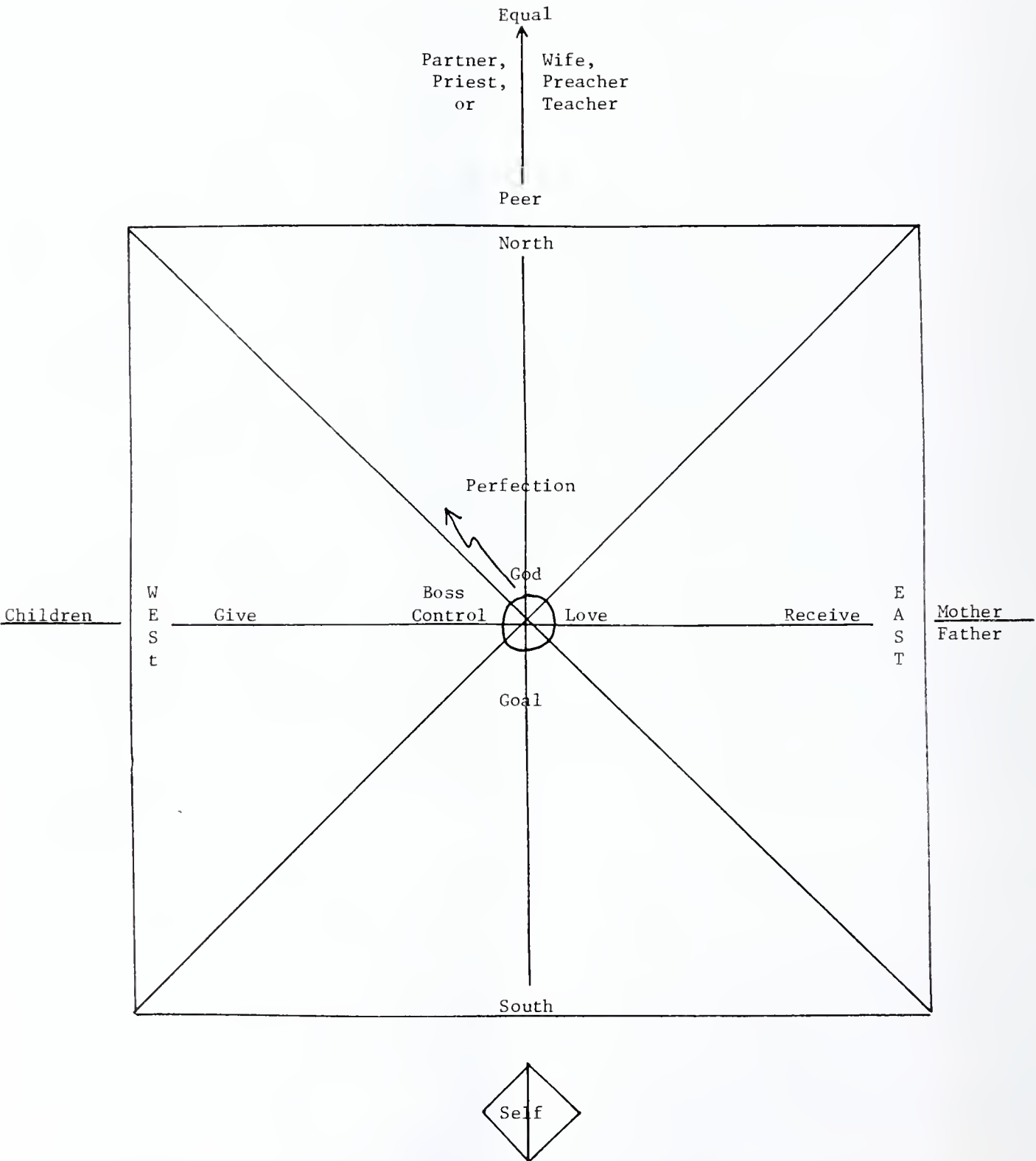


FIGURE 4.

Again interpersonal relationships are featured. Note that self is divided and that the patient is headed toward perfection. The patient has difficulties with boss control, goals, love and God apparently.

# Medical Grand Rounds

## Vasculitis

Eleanor A. Lipsmeyer, M.D.\*

The etiology, classification and treatment of the vasculitic syndromes remain controversial.<sup>1-5</sup> Because of this I have categorized them as characterized by polymorphonuclear leukocyte (PMN) infiltration or by lymphocyte and mononuclear cell infiltration. (Table I details this classification).

To understand vasculitis, one must consider the difference in acute and chronic antigenic stimulation and in antibody response to antigenic stimuli. Perhaps the best understood mechanism is that of acute immune complex deposition seen in rabbits given one injection of bovine serum albumin.<sup>6</sup> A large dose of foreign protein antigen is injected and there is an initial slow fall of circulating antigen levels because of tissue equilibration and non-immune catabolism. On the eighth day after injection, the rate of fall is increased when specific antibody synthesis begins. By the tenth day there is marked reduction in the concentration of free antigen; the majority of the antigen in the circulation appears as antigen-antibody complexes. When these soluble immune complexes are in the circulation, there is a decrease in serum complement and clinical and pathologic manifestations of acute serum sickness are noted. At the lesion site, foreign antigen, host antibody, and complement components are found. If a different antigen or antibody is injected during the development of these complexes, it will not be incorporated into the immune deposits, indicating that the antigen-antibody combination and deposition is quite immunologically specific. Deposi-

- a) *Bacterial*:
  1. Poststreptococcal glomerulonephritis
  2. Syphilis
  3. Mycoplasma pneumonia
  4. Subacute bacterial endocarditis
- b) *Viral*:
  1. HBAG hepatitis prodrome
  2. Guillain-Barre syndrome
  3. Infectious mononucleosis glomerulonephritis
- c) *Parasitic infection*
  1. Malarial nephrotic syndrome
  2. Leishmaniasis
  3. Trypanosomiasis
  4. Schistosomiasis
- d) *Malignancies*
  1. Carcinoma of the lung
  2. Carcinoma of the breast
  3. Carcinoma of the colon
  4. Malignant melanoma
  5. Acute lymphoblastic leukemia
  6. Chronic lymphocytic leukemia
  7. Hodgkin's disease
- e) *Collagen vascular disease*
  1. Systemic lupus erythematosus
  2. Rheumatoid arthritis
- f) *Drug-induced*
  1. Penicillamine
  2. Serum sickness
- g) *Miscellaneous*
  1. Essential mixed cryoglobulinemia
  2. Regional enteritis
  3. Ulcerative colitis
  4. Intestinal bypass

**TABLE I**

### Classification of Vasculitis

- A. Lesions characterized by polymorphonuclear leukocytes (PMN):
  - 1) *Larger vessel involvement*:
    - a) Polyarteritis nodosa
  - 2) *Small vessel involvement*:
    - a) Hypersensitivity angiitis
    - b) Henoch-Schonlein purpura
  - 3) *Vasculitis associated with other systemic diseases*:

- B. Lesions characterized by granulomatous response:
  - 1) *Giant cell arteritis*
    - a. Temporal arteritis
    - b. Takayasu's arteritis
  - 2) *Granulomatous angiitis*
    - a. Wegener's granulomatosis
    - b. Midline granuloma
    - c. Lymphomatoid granulomatosis
    - d. Benign lymphocytic angiitis and granulomatosis

\*Associate Professor of Medicine, Division of Rheumatology, UAMS.

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tion of the antigen-antibody complexes activates complement through the classical pathway and results in the formation of anaphylatoxins, C3a and C5a, which induce polymorphonuclear leukocyte chemotaxis. Both complement and circulating PMNs are necessary for production of disease following antigen-antibody complex deposition. Lysosomes in the PMNs release the lysosomal enzymes which destroy vessels and glomerular basement membranes. Two important factors determine immune complex deposition. These are: size and concentration of the complex. The size is important in that it is largely function of the ratio of antibody to antigen. Complexes with antibody excess are rapidly cleared by the reticuloendothelial system. Complexes with slight antigen excess or equivalence are soluble, and evade this system.

Also important to the deposition of complexes is the concentration of circulating immune complexes. This knowledge comes from data noted in the chronic serum sickness model following continuous antigenic stimulation.<sup>7</sup> The lesions produced by immune complex deposition are quite different from ones induced in acute serum sickness or by a single antigen injection. If there is chronic antigenic stimulation, the amount of antibody produced determines the character of immune complex disease (see Table II).<sup>8</sup> In

Group I animals, no antibody was produced. Free antigen circulated but there were no immune complexes and no disease resulted. In Group II animals, low level of antibody was made, and these animals were called "low-level responders". In Group IIA there was also a low level of circulating immune complexes. These animals developed diffuse thickening of the basement membrane compatible with membranous glomerulonephritis. There was very little cellular proliferation and their clinical picture was that of nephrotic syndrome with proteinuria. Immunofluorescence done on the basement membrane revealed IgG and the C3 component of complement in regular finely granular subepithelial deposits. In Group IIB animals with low-level of antibody but a high level of circulating immune complexes developed diffuse glomerulonephritis. Their lesions were destructive with endothelial and mesangial cell proliferation. The basement membrane on immunofluorescence revealed diffuse, irregular, coarsely granular subepithelial deposits of IgG and C3. In Group III, animals made intermediate levels of antibody. The complexes were in antigen-antibody equivalence and were rapidly cleared by the phagocytic mesangial cells. There was mesangial hypertrophy and proliferation. Electronmicroscopy revealed deposits within the

**TABLE II<sup>8</sup>**  
**Response to Chronic Antigenic Stimulation in the Rabbit Model System**

<i>Group</i>	<i>Level of Antibody Production</i>	<i>Type of Immune Complex</i>	<i>Electron Microscopy</i>	<i>Renal Pathology</i>
I	None	None	None	No lesions
II	Low-level responders:			
	A. Low concentra- tion immune complexes	Ag excess	Subepithelial deposits	Membranous glomerulonephritis
	B. Higher concen- tration immune complexes	Ag excess	Subepithelial deposits	Diffuse proliferative glomerulonephritis
III	Intermediate responders	Equivalence	Basement membrane and subendothelial deposits	Benign mesangial hypertrophy Membrano- proliferative glomerulonephritis
IV	High-level responders	Ab excess	None	No lesion

mesangium and the basement membrane. This was thought to be a relatively benign disease. The glomerulus was damaged only if there was a large amount of immune complexes which saturated mesangial cells and allowed deposition in the remainder of the glomerulus. Group IV animals showed the greatest antibody response; these animals formed complexes at antibody excess which were rapidly cleared by the reticuloendothelial cells. No disease occurred.

Deposition of immune complexes also seemed to be active rather than passive. There must be simultaneous activation of vaso-active amines at the site for immune complex deposition to occur.

*Vascular lesions characterized by polymorphonuclear leukocytes.* In a consideration of larger vessel involvement by mechanisms which produce PMN activation, polyarteritis nodosa is the classic example. It is a necrotizing vasculitis in the large and medium-size muscular arteries. The lesions tend to be segmental with a predilection for bifurcation and branching of the arteries. PMNs infiltrate all layers of the vessel wall and perivascular area. Renal involvement, when it exists, is present as vasculitis in 70% of the cases and as glomerulonephritis, in 30% of the cases. Renal involvement and hypertension mark a poor prognosis in this disease. GI involvement may be manifest as intestinal infarction. There may be coronary arteritis, and mononeuritis multiplex may occur. Lesions also are noted in the testes, bladder, epididymis, and ovary. Arthralgia is common; frank arthritis is rare. Classically the lungs and spleen are not involved and skin involvement is rare. The diagnosis may be made by angiography of the renal or celiac arterial system. Biopsies of the kidney, if renal disease is present, or of the sural nerve if mononeuritis multiplex is present, are helpful. If none of these areas yield the diagnosis, occasionally blind biopsy of the testes will be useful. Hepatitis B antigen or antibody and circulating immune complexes are found in 30-50% of these patients.<sup>9</sup> Churg-Strauss syndrome is a subset of polyarteritis with involvement of the lungs with formation of granulomas or asthma, eosinophilia, and a previous allergic history.

Smaller vessel involvement is seen as hypersensitivity angiitis. This is characterized by leukocytoclastic vasculitis which is characterized by the disintegration of neutrophils producing nuclear dust and necrotic areas within the vessel

wall.<sup>10,11</sup> It occurs in post-capillary venules and may lead to fibrinoid necrosis. There may be extravasation of the fluid beyond the vessel. Clinically, the patient shows palpable purpura. This is to be differentiated from the flat purpura which occurs with thrombocytopenia. Initiating antigens in these diseases are usually defined and may represent drugs, microorganisms or heterologous proteins. Usually the lesions are of the same age and there is strong evidence of immune complex deposition in the vessels.

Henoch-Schönlein purpura is a subgroup of hypersensitivity angiitis. It occurs in children and may be manifest by joint, GI disease, or renal disease. The nephritis of this disease reveals IgA antibody in the immune complexes deposited within the mesangium. It is thought that this probably represents activation of the alternate pathway by aggregated IgA since it may occur in patients with congenital absence of C2.

*Vasculitis associated with other systemic diseases.*

a) *Bacterial.* Several examples of bacterial association with vasculitis have been noted, but subacute bacterial endocarditis is perhaps the most important. In endocarditis, 97% of patients tested had increased levels of circulating immune complexes. High levels of immune complexes in bacterial endocarditis usually mark longer duration of the disease, presence of extravalvular disease, and right sided endocarditis. Several patients did not decrease their immune complexes until surgical extirpation of the valve was achieved.

b) *Viral.* Hepatitis B antigen appears to be the greatest culprit. It produces hepatitis prodrome, or arthritis-hepatitis syndrome, an immune complex mediated disease in which Hepatitis B antigen induces antibody formation, with immune complex deposition in the joints and frank arthritis. Joint fluid reveals Hepatitis B antigen and decreased complement. There is usually relief of the syndrome when jaundice appears. Infectious mononucleosis has also been noted to be accompanied by vasculitis.

c) *Parasitic infections* have been noted to be associated with vasculitis. Nephrotic syndrome occurs in quartan malaria caused by *Plasmodium malariae*.

d) *Malignancies.* Carcinoma of the lung, breast and colon have been implicated. Hodgkin's disease may be associated with nephrotic syn-



drome. In one patient with carcinoma of the lung, a diffuse membranous nephropathy with nephrotic syndrome was noted. Following death of the patient, the kidneys were removed; antibody was eluted and reacted specifically with the tumor cell membrane.

e) *Collagen vascular disease.* Patients with systemic lupus erythematosus may develop vasculitis with deposition of double-stranded DNA and anti-DNA in vessels. Rheumatoid arthritis is rarely associated with vasculitis.

f) *Drug-induced.* Serum sickness is caused by drugs or an injection of foreign serum. Classically this is seen three days to three weeks after the injection of the foreign serum; immune complexes are deposited and cause fever, malaise, urticaria, skin rash, arthralgia and lymphadenopathy. Horse serum, penicillin and anti-lymphocyte serum are responsible for serum sickness.

g) *Miscellaneous.* Essential mixed cryoglobulinemia<sup>12,13</sup> is a syndrome with purpura, weakness, arthralgia, decreased C3, and occasionally glomerulonephritis. Circulating immune complexes have been noted in the blood. In 74% of patients studied, there are cryoprecipitates present which contain Hepatitis B antigen or Hepatitis B antibody.

*Jejunal ileal bypass* has been noted to be associated with arthritis in some patients. Cryoprecipitates in their serum contain IgG antibody against *E. coli* and *Bacteroides fragilis*. Cryoprecipitates were also noted in the joint fluid. It was postulated that immune complexes were generated by the bacterial overgrowth in the blind loop of gut with subsequent release of the antigen.

*Diagnosis of vasculitis associated with PMNs.* The most direct way of making the diagnosis is with biopsy of involved vessels or skin. In polyarteritis nodosa, arteriography may be diagnostic. Cryoglobulins usually represent immune complexes. Other tests for immune complexes include polyethylene glycol (PEG) precipitation and Raji cell techniques. Immune complexes are precipitated by 3.5% PEG and may be measured. Immune complexes bind to the Fc receptor of Raji cells, which are B cells derived from Burkett's lymphoma. Immunofluorescence with anti-IgG anti-serum is done and if positive, indicates the presence of immune complexes.

*Vasculitis characterized by lymphocytes and mononuclear cells.*

(1) *Mechanism.* It is believed that granuloma formed in these types of vasculitis are produced by the release of lymphokines from sensitized lymphocytes when stimulated with antigen. These lymphokines recruit monocytes to the reaction site and then activate them causing them to become more phagocytic. It has also been postulated that monocytes, because they possess an Fc receptor, may be activated by immune complexes, and transformed into activated macrophages. Activated macrophages release lysosomal enzymes in damaged blood vessel walls. They may also transform to epithelioid cells and form granulomas. The experimental data regarding development of granulomatous vasculitis indicates that antigen is highly concentrated at one focal point drawing sensitized lymphocytes and thus macrophages to that site. There are also large amounts of insoluble immune aggregates at the site. Animals who form granulomas have had anaphylaxis when they received very large amounts of antigen. If the antigen is indestructible or cytolytic for macrophages, it may initiate a vicious cycle with phagocytosis by macrophages, macrophage death, antigen release, and recurrent macrophage activation. Vasculitis mediated by polymorphonuclear leukocytes is due to soluble complexes while that due to cell-mediated immunity (lymphocyte and mononuclear cells) results from larger insoluble complexes with huge amounts of antigen.

*Giant cell arteritis.* Two types of giant cell arteritis are known. These are panarteritides characterized by inflammation of medium size and large arteries. Their differences extend over age range, distribution of involved vessels, associated symptoms, and their response to therapy.

*Temporal arteritis*<sup>14</sup> is usually accompanied by fever, anemia, and increased ESR in a patient over 55 years of age. One or more branches of the carotid artery, especially the temporal, may be involved and there may be concomitant systemic vasculitis. The histology shows inflammatory mononuclear infiltrate, giant cells in the vessel wall, and fragmentation of the internal elastic lamina. It is usually accompanied by polymyalgia rheumatica which is a syndrome consisting of stiffness, aching, pain in the neck, lower back and hip girdle musculature. (Polymyalgia rheumatica may occur as a syndrome alone and does not

always indicate temporal arteritis). Ocular involvement in temporal arteritis may occur and lead to sudden blindness, but usually there have been complaints relating to the head and eyes prior to blindness. The diagnosis is made by biopsy of the temporal artery but its segmental nature requires that multiple sections of the artery be examined.

*Takayasu's arteritis* or "pulseless" disease is a disease of young women who are usually Oriental. They have large or medium artery involvement with predilection for the aorta and its branches. There is a panarteritis with an inflammatory mononuclear cell infiltrate, scarring and vascularization of the media, disruption of the lamina, and ultimately vessel occlusion. It is characterized by a compromised blood flow to the extremities or to organs. There may be absent pulses in involved areas or bruits may be heard. Death may result from congestive heart failure or from cerebral vascular accident. Diagnosis is usually accomplished through aortography.

*Granulomatous angiitis*. Wegener's granulomatosis<sup>15, 16</sup> is a necrotizing granulomatous vasculitis of the upper and lower respiratory tract. Glomerulonephritis must be present. There are variable degrees of disseminated small vessel vasculitis. The histology shows inflamed blood vessel wall which is necrotic and palisaded by histiocytes, and a few multinucleated giant cells. Circulating immune complexes are absent; the diagnosis is made through biopsy of the paranasal sinuses, the lung, or the kidney.

*Midline granuloma* is an entity which is separable from others because it is a necrotizing granuloma and vasculitis of the upper airway in the absence of involvement of the lungs and kidneys. It is a highly destructive process and not associated with neoplasm.

*Lymphomatoid granulomatosis* occurs in the lungs, is angio-invasive and has a highly atypical lymphoreticular infiltrate. It is frequently accompanied by cutaneous and neural involvement. The disease is thought to act much like lymphoma.

*Benign lymphocytic angiitis and granulomatosis*. This entity has been proposed by Israel et al<sup>17</sup> and is limited to the lung. It consists of prominent vasculitis with cellular lesions composed of mature lymphocytes, plasma cells and histiocytes. The angiitis and necrosis is less pronounced than that seen in Wegener's granuloma-

tosis. A controversy has arisen as to whether this is a single lesion or represents an early stage of Wegener's granulomatosis or lymphomatoid granulomatosis.

TABLE III

**Current Therapy for Vasculitic Syndromes**

Disease	Treatment
Polyarteritis nodosa	Corticosteroids Cyclophosphamide
Hypersensitivity angiitis	Expectant waiting Short courses of corticosteroids
Vasculitis associated with systemic disease	Remove antigen Corticosteroids
Serum sickness	Antihistamines Corticosteroids
Mixed essential cryoglobulinemia	Resistant to corticosteroids ? Cytotoxic agents
Temporal arteritis	Corticosteroids
Takayasu's arteritis	Resistant to corticosteroids ? Cytotoxic agents
Wegener's granulomatosis	Cyclophosphamide
Midline granuloma	Local high-dose radiation
Lymphomatoid granulomatosis	Cyclophosphamide $\pm$ corticosteroid
Benign lymphocytic angiitis and granulomatosis	Chlorambucil ? Cyclophosphamide

*Newer methods of treatment.*

*Methylprednisolone "pulse" therapy.*<sup>18</sup> One gram methylprednisolone is given as a bolus intravenously for three consecutive days. Used in proliferative glomerulonephritis, 5 of 7 patients improved renal function; 7 of 7 patients improved immunologic abnormalities.

*Plasmapheresis or plasma exchange with immunosuppression.*<sup>19</sup> In one series nine patients who had rapidly progressive glomerulonephritis were treated with plasma exchange. Four units were removed every other day for two weeks. At the same time immunosuppression with prednisone, cyclophosphamide, or azathioprine are given. Five of nine had marked improvement with decrease in immune complexes; when plasmapheresis was discontinued, three of the patients again developed immune complexes.

In a recent article, Fauci<sup>20</sup> described the use of cyclophosphamide treatment of severe systemic necrotizing vasculitis. Seventeen patients who had severe progressive disease and who were all on corticosteroids were studied. Six of the 17 had positive HBAG, six of the 17 had cryoglobulinemia. All complement determinations were normal. All patients had elevated ESR's. Patients were selected for the study if they had subjective and objective evidence of



progression of disease measured by functional impairment of involved organs despite corticosteroids. Three patients in the study died. Fourteen of 17 achieved complete remission. He suggested that treatment of choice for these diseases was cyclophosphamide used early in the course of vasculitis.

The accompanying editorial<sup>21</sup> urged caution in the use of cyclophosphamide. The use of corticosteroids has increased the five-year survival in polyarteritis nodosa from 13% to 48% and the author thought that a course of corticosteroids should be given before cytotoxic therapy was started. He reasoned that the patients in Fauci's group might have been failures on corticosteroids. The following protocol was proposed: patients with systemic necrotizing vasculitis should be treated with prednisone, 1 mg/kg/day, for four weeks; if side effects from corticosteroids become severe or if steroids have not slowed the progression of disease, cytotoxic agents should be used.

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# Pediatric Review:

## Transient Diabetes Mellitus Secondary to Diphenylhydantoin Intoxication

Phyllis E. Stansell, Heinrich K. Schedewie, M. Joycelyn Elders,  
Robert H. Fiser, Jr., John H. Bornhofen, and Veronica O. MacLeod\*

Although neurotoxicity is a well known side effect of diphenylhydantoin (DPH) treatment in childhood,<sup>8</sup> hyperglycemia has rarely been described as a complication of DPH therapy in the pediatric age group.<sup>5,9</sup> We have recently seen a child with DPH hypersensitivity and toxicity which was associated with reversible hyperglycemia and glucosuria.

### Case Report

The patient was a 17-year-old black female who had been placed on DPH medication at five years of age when she was diagnosed to have idiopathic grand mal epilepsy. Her seizure disorder had been controlled without complications on DPH, 200 mg daily. Three months prior to admission, however, her drug dosage had been increased to 300 mg per day because of a breakthrough grand mal convulsion. No serum DPH levels were measured at that time. The patient subsequently developed increasing symptoms of clumsiness, dizziness, forgetfulness, and a gradual change of personality; her school grades dropped from average to failing.

Her physical examination upon admission revealed a quiet teenager who responded to questions slowly and with difficulties. She displayed generalized ataxia, dysarthria, and lateral gaze nystagmus. The remainder of her physical examination was unremarkable except for a prominent gingival hyperplasia.

Initial laboratory studies showed a normal CBC, electrolytes, BUN, creatinine, and liver function tests. A urinalysis revealed 2-4+ glucosuria without ketonuria. Fasting blood sugar concentrations ranged from 150-180 mg/dl. A 2-hour postprandial blood sugar was determined 225 mg/dl. Plasma DPH concentrations were 39 ug/ml (normal 10-20). The symptoms of DPH neurotoxicity were interpreted as resulting from

idiopathic slow drug metabolism since there was no evidence for liver or renal dysfunction and there was reliable information that a DPH dose of 5 mg/kg had not been exceeded by the patient.

DPH medication was discontinued upon hospital admission and resumed three days later at the reduced dose of 2.5 mg/kg per day. Decreasing amounts of glucosuria persisted for another two days; an oral glucose tolerance test (OGTT) carried out on day four showed a diabetic glucose disappearance curve (Figure 1). Neurological symptoms improved gradually but were still significant after twelve days when DPH concentrations had dropped to 21 ug/ml and the patient was discharged. Two weeks later, at her first follow-up clinic visit, the patient had no glucosuria by clinitest. A repeat OGTT with measurement of plasma insulin, glucagon, and growth hormone was performed four months after the acute DPH intoxication and revealed no biochemical abnormalities suggestive of diabetes mellitus (Figure 1).

### Discussion

Hyperglycemia resulting from DPH medication was first observed by Belton, et al.<sup>1</sup> while studying glucose metabolism in rabbits following electroshock convulsions. While a post-shock

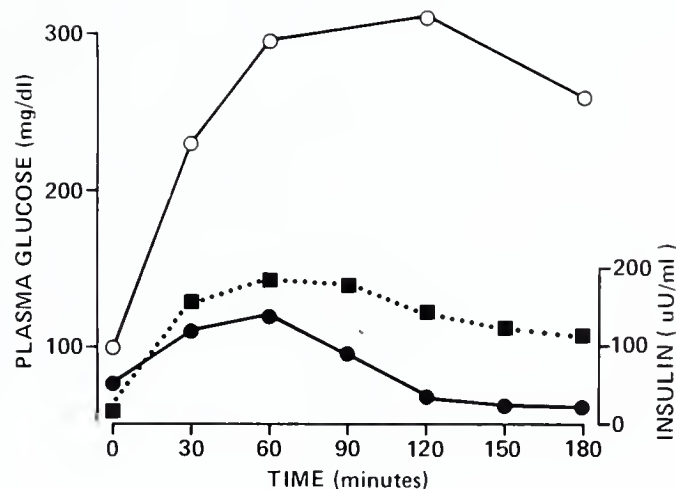


FIGURE 1.

Repeat OGTT: Comparison of plasma glucose concentrations during DPH intoxication (0-0) and 4 months later (●-●). Plasma insulin concentrations (■-■) were monitored during the second test.

\*Department of Pediatrics, University of Arkansas for Medical Sciences, 4301 West Markham Street, Little Rock, Arkansas 72201. Mailing Address: Heinrich K. Schedewie, M.D., Department of Pediatrics, University of Arkansas for Medical Sciences, 4301 West Markham Street, Little Rock, Arkansas 72201. Telephone: (501) 661-5589.



glucose increase of 50 mg/dl occurred in rabbits receiving no anti-convulsive medication, a much more marked blood sugar rise of 130 mg/dl was observed in animals pretreated with DPH. Subsequent *in vitro*<sup>4</sup> and *in vivo* studies<sup>2,7</sup> have shown DPH to be a potent inhibitor of insulin secretion. DPH has been reported to diminish the release of insulin in response to glucose, arginine, leucine, and glucagon.<sup>7,6</sup> In one study, DPH has been proposed as a potentially useful drug to control insulin induced hypoglycemia in patients with islet cell tumors.<sup>3</sup>

Considering the frequent use of DPH in the treatment of grand mal seizures, it is surprising that hyperglycemia and glucosuria are not observed with greater frequency. We were able to find only three reports in the pediatric literature of overt diabetes mellitus complicating DPH therapy.<sup>5,9,10</sup> In all of these patients, significant neurotoxicity was a concomitant feature. Glucose tolerance returned to normal, once the drug was discontinued. To date, no case of permanent diabetes mellitus has been reported as a complication of DPH intoxication. However, there appears to be a lack of studies investigating the incidence of chemical diabetes and more subtle endocrine-metabolic changes of carbohydrate and lipid homeostasis possibly associated with chronic DPH treatment. *In vitro* studies indicate that DPH, even in average anticonvulsive doses, has a potent inhibitory effect on insulin secretion.<sup>4</sup>

It is possible, therefore, that careful evaluation and follow-up of patients on DPH medication may show carbohydrate intolerance to be a more frequent complication than has been reported previously.

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# Office Orthopaedics

## Growth Plate Fractures at the Knee and Ankle

H. Austin Grimes, M.D.\*

Increasing emphasis on sports activities in the young has led to a reassessment of injuries to the growth plate. We, as physicians, have become somewhat accustomed to the fact that there will continue to be many injuries to the vital areas of growth in the lower limbs as a result of increased pressure to perform, both from their peer group and from their parents. Our role as physicians is advisory for the most part, advocating caution when it is acceptable. In most contact sports, however, it is not acceptable and our role then becomes the treating party after the injury has become fact. Recognition of these epiphyseal injuries is sometimes obvious. Even

with appropriate diagnosis and treatment, deformities and leg inequality may occur.

Unrecognized growth plate fractures may be a source of nightmares to fledgling physicians. Adequate knowledge of these problems in diagnosis, treatment and the pitfalls will allay such anxiety. Comparative x-ray views of uninvolved limbs are often helpful.

### ANATOMY

(See Figure 1)

The growth plate may be divided anatomically into three components: the bony part or metaphysis; the cartilaginous part which is subdivided into several cellular zones; and the fibrous part which surrounds the plate.

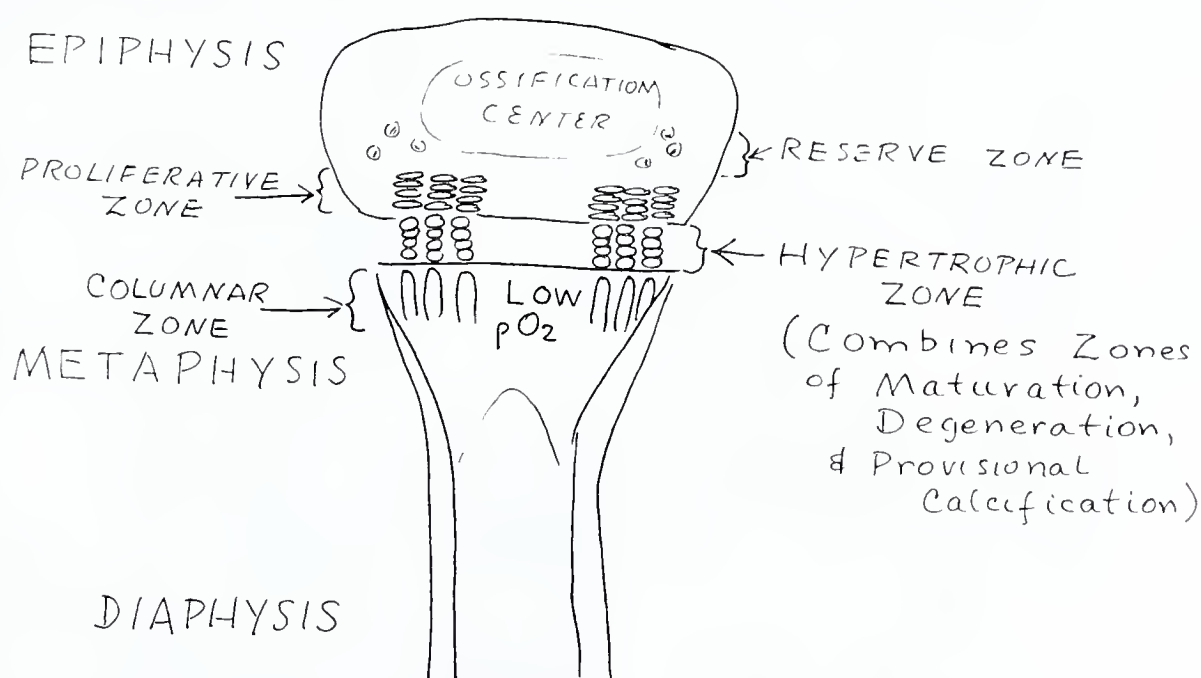


FIG. 1

\*Little Rock Orthopedic Clinic, P.A., 9500 Lile Drive, P. O. Box 5270, Little Rock, Arkansas 72215.



The diaphysis is the shaft of the long bone and the ossification center has become a part of the epiphysis with its surrounding reserve zone or storage area for replacement cartilage cells peripherally.

In Figure 1 the proliferative zone has a rich blood supply but no vessels pass from this zone to the hypertrophic zone.

The metaphysis also has an abundant blood supply with a vast number of closed vascular loops. Again, no vessels pass from this zone to the hypertrophic zone. Thus, this avascular hypertrophic zone has a unique status in the growth plate.

Microscopically the cells of the hypertrophic zone are fat and greatly enlarged in comparison to the flattened cells of the proliferative zone on the one side and the columnar zone cells of the metaphyseal side.

Vascular stasis in the metaphysis is indicated by the lowered  $pO_2$ . Rouleaux formation of the red blood cells probably contributes to the vulnerability of the hypertrophic zone, as it is this zone which is the site of fractures to the growth plate.

Haas, in 1919, experimentally produced epiphyseal fractures and found they occurred at the hypertrophic zone and demonstrated aberrant growth as a result of the impairment.

The incidence of growth plate injuries to all fractures in children is approximately 15%.

## CLASSIFICATION

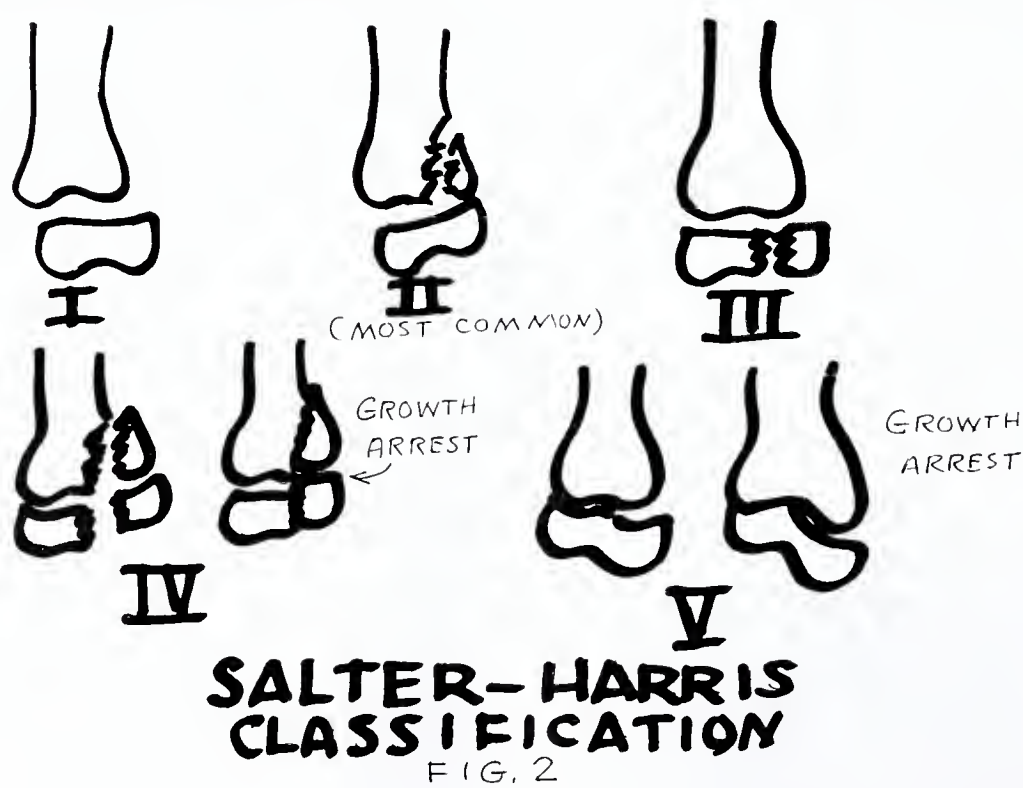
Classically, Salter and Harris in 1963 published the standard paper on classification of these fractures. This system continues to be the basis for most variations on this grading scheme. (See Figure 2.) This scheme applies to all growth plates, whereas, older coding by Aitken (1936) (see Figure 3) applied to only distal femoral epiphyses and later (1978) Dias and Tachdjian devised one for the ankle. However, the latter modified this with special consideration to the forces producing the injury, their reasoning being manipulation is better accomplished if the reverse of the injury forces is utilized to reduce the fracture.

Drawings of a majority of the growth plate injuries are shown rather than x-ray reproductions for clarity. (See Figures 3-8.)

There are reported cases of non-displaced fractures of the proximal third of the tibia which showed no apparent displacement initially, but show deformity a month or so later as much as 20-30 degrees, either in varus, valgus or recurvatum. This deformity usually requires surgical correction.

Growth disturbances may be minimal in infants or in over 13 year olds. This is due to infants marked correctional ability and to the limited growth period remaining in the 13 year old.

In the age group between infants (approx-



mately 18 months) and 13 year olds, there is a profound growth potential that may be impaired. Injuries to the epiphysis in this age group (2-12) usually cause cessation of growth 9-15 months after fracture. Therefore, in all growth plate injuries it behooves us to follow these children for at least two years, with x-rays at 6 month intervals after healing of the fracture.

Duhaime reported abduction type injuries to the ankle are more likely to cause growth disturbance. Distal tibial injuries are not as likely

to cause shortening of overall length of the tibia.

Fully 3/4th of the limb growth occurs at the knee and trauma to this area more frequently is associated with leg length discrepancies.

It is reported that the Salter-Harris Type II fracture is the more common and is due to supination inversion forces when it occurs in the ankle, which is about 50% of the time.

There may be more than one force operating on the injury site and it is especially true about the knee and, as with ankle injuries, depends on

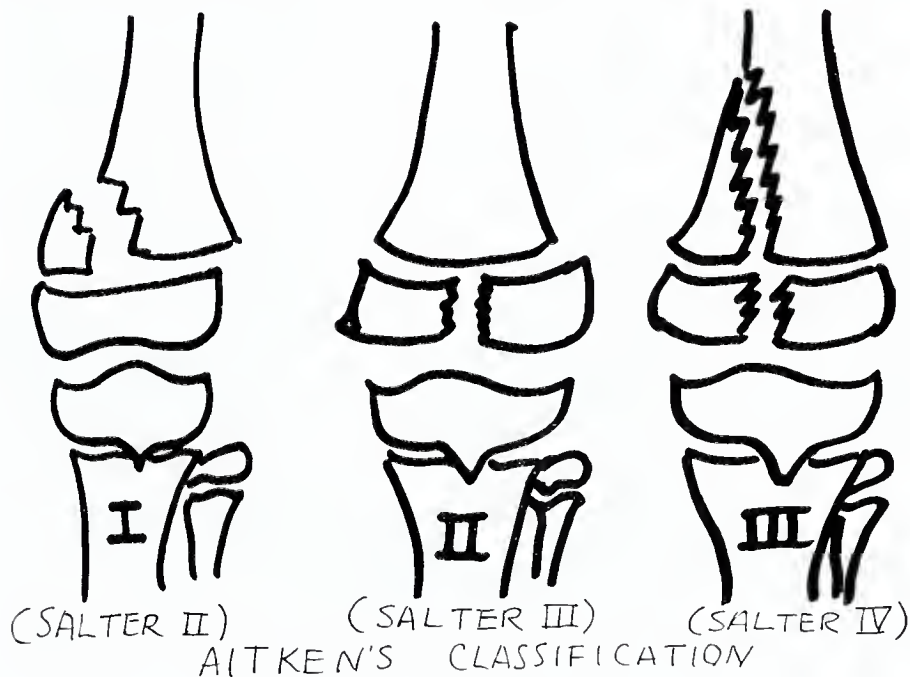


FIG. 3

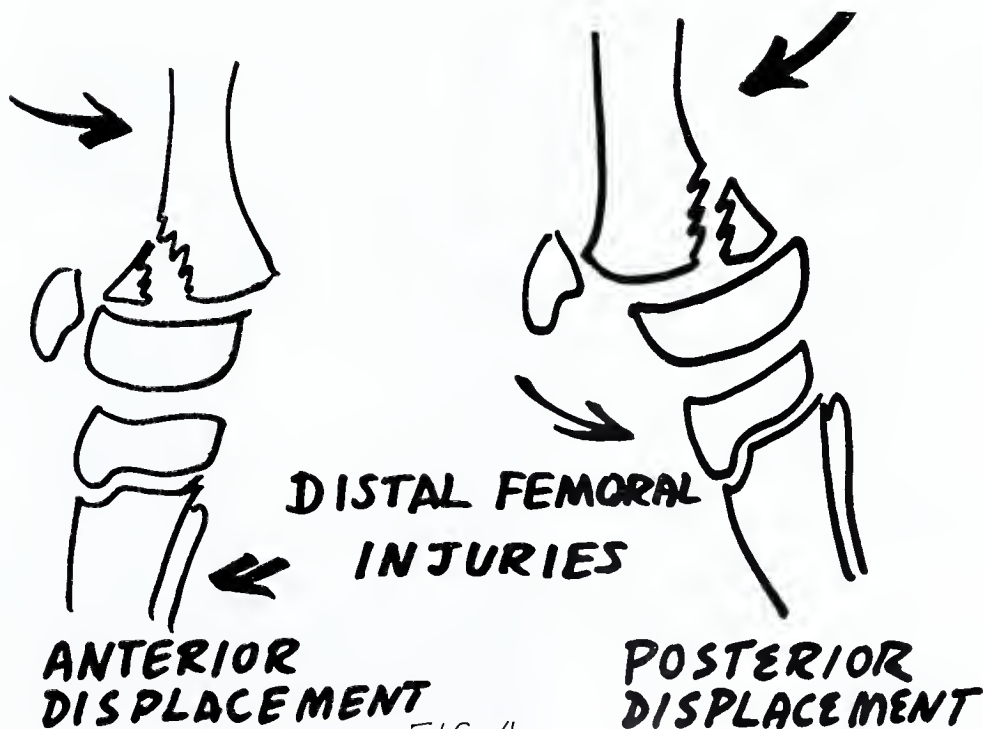


FIG. 4



the position of the foot and direction of the forces.

When leg length discrepancies occur and/or angular deformities of the joints result, then correctional surgery is indicated. This may be in the form of deliberate growth arrest of the opposite leg, or osteotomies to realign joints.

**CAUTIONS**

Popliteal artery rupture or spasm may occur in anteriorly displaced fractures of the distal

femoral epiphysis and proximal tibial epiphysis whether grossly displaced anteriorly or posteriorly. Anterior compartment syndrome may occur with varying degrees of injury to the proximal tibial epiphysis. Therefore, assessment of the pulses in the popliteus and foot are vital in evaluating the injury, the method of treatment and the prognosis of each of these injuries.

Anatomical reduction of these growth plate fractures is very important. It is disconcerting to

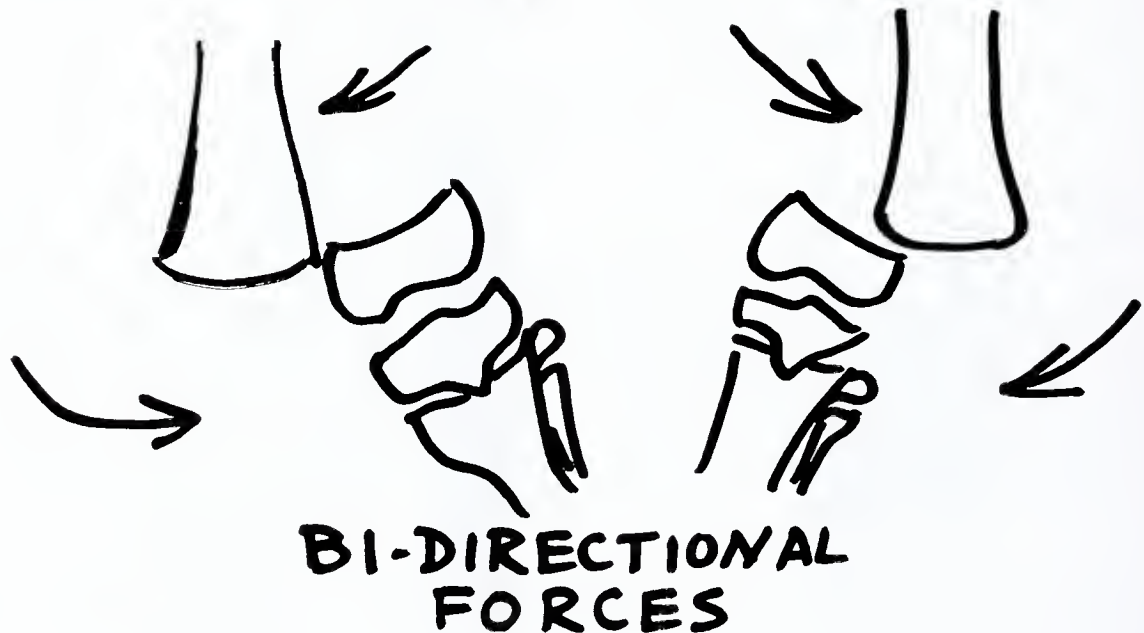


FIG. 5

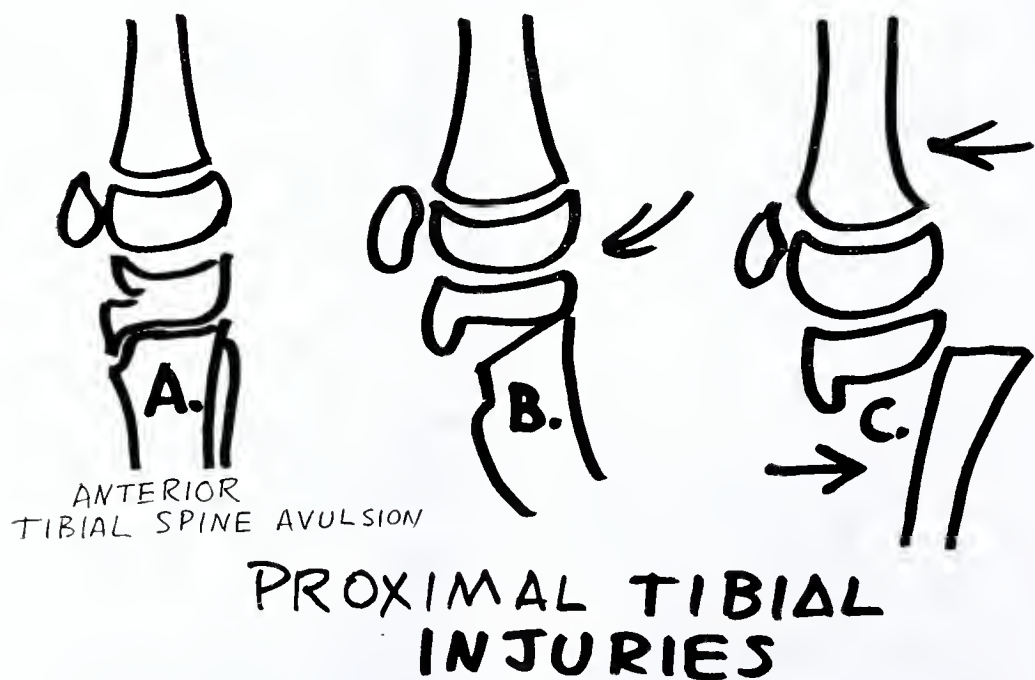


FIG. 6

discover, on follow-up x-rays in your office a week or ten days later, that the reduction has slipped and even more frustrating is the fact that you are unable to improve this position with re-manipulation.

#### SUMMARY

- 1.) Proper diagnosis (x-ray both limbs)
- 2.) Guarded prognosis as to growth disturbance (18 mos.-12 yrs.)
- 3.) Astute vascular assessment

- 4.) Anatomical reduction
- 5.) At least a 2 year follow-up
- 6.) Fractures about the knee may shorten leg or angulate in proximal tibia
- 7.) Angulation may occur in the ankle mortise with functional limitations
- 8.) Reduction may be lost and need early re-assessment by x-ray (1 week - 10 days)

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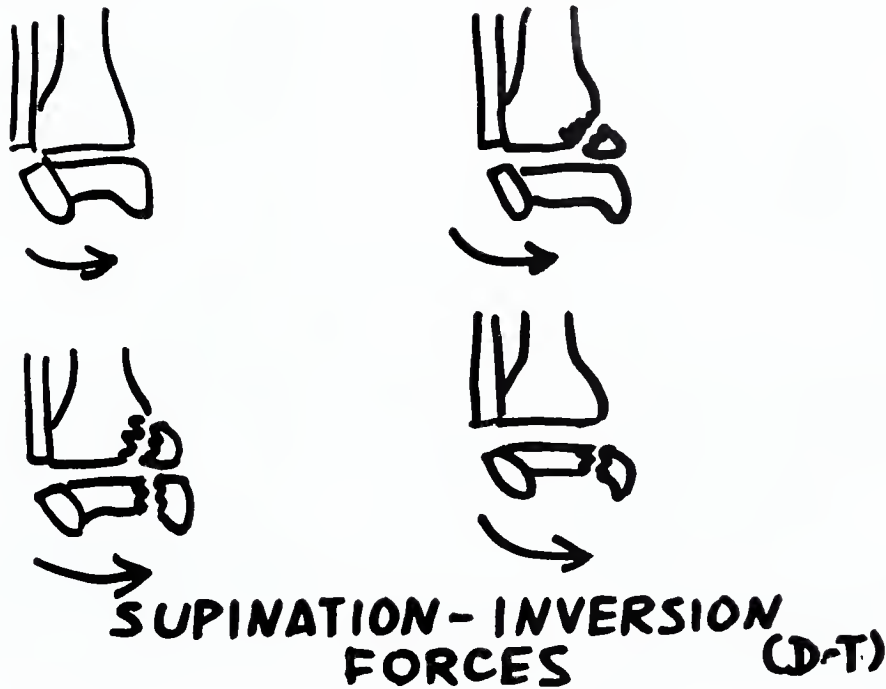


FIG. 7

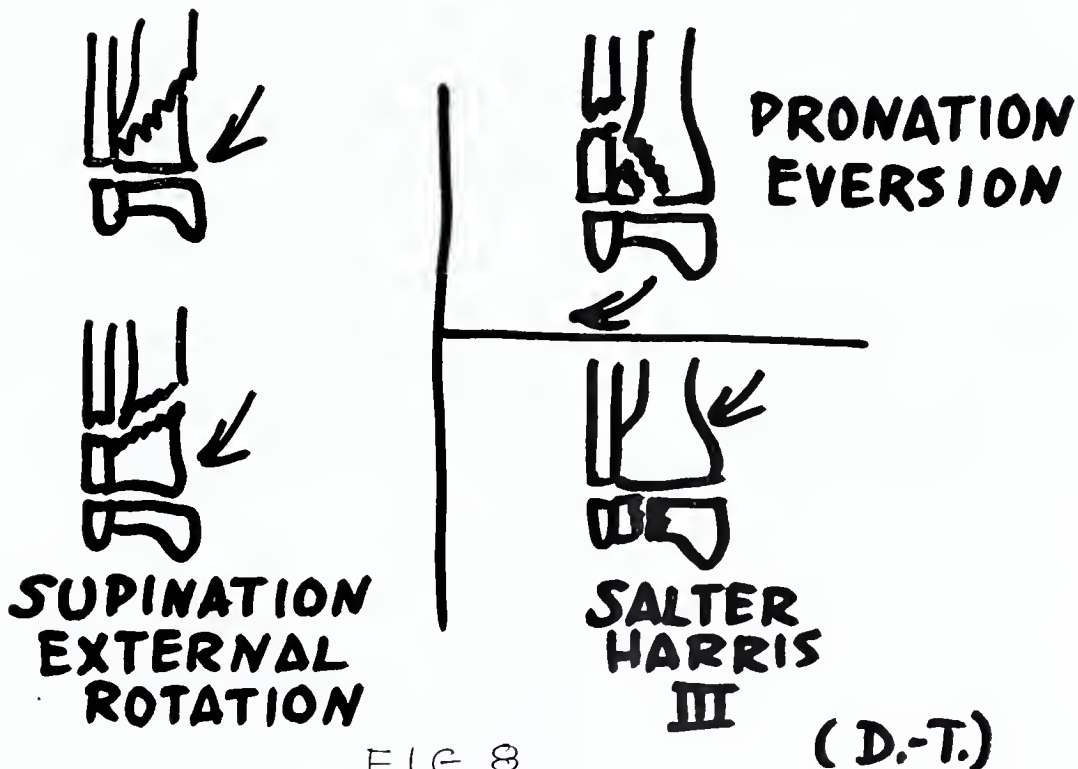
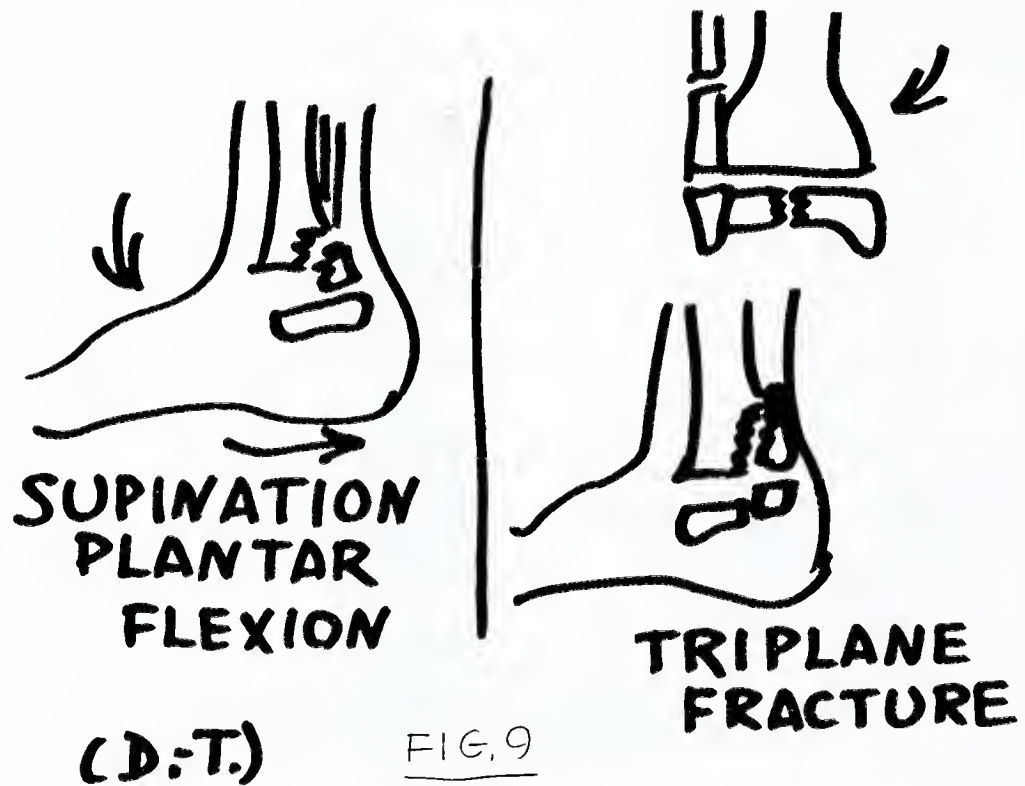


FIG. 8



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## ELECTROCARDIOGRAM

## OF THE MONTH

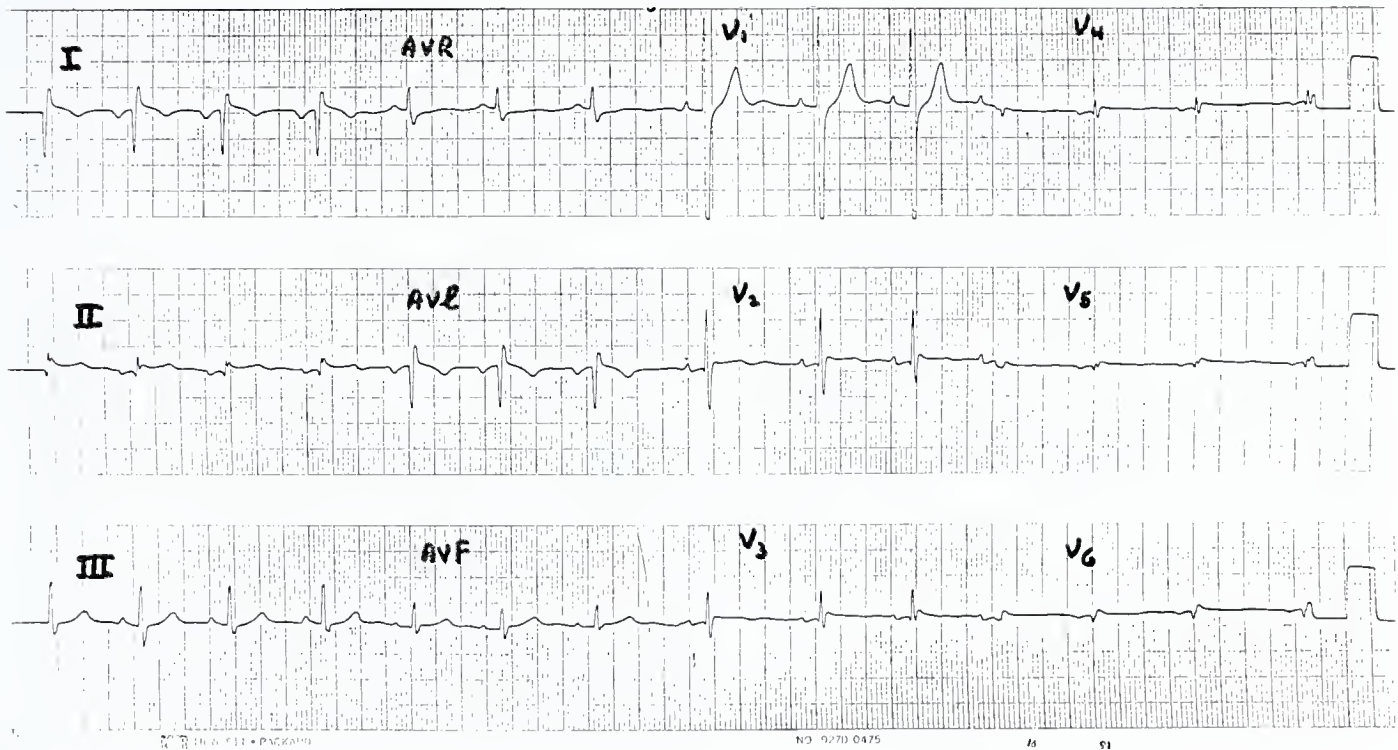
The Department of Cardiology, University of Arkansas College of Medicine

(See Answer on Page 228)

**HISTORY:** Mr. H. is a 42-year-old black man who has presented for a pre-employment physical examination. He was told at age sixteen that he had a heart murmur but has experienced no limitations on physical capabilities. An episode of atypical chest pain related to chest trauma was noted six week prior to presentation. His physical examination reveals a grade 2 of 6 ejection murmur loudest in the right second costal interspace. The patient's ECG, which was done by an inexperienced technician, is shown below.

Which one of the following choices best explains the electrocardiographic findings?

1. Anterolateral infarction of unknown age.
2. Dextrocardia.
3. Left posterior fascicular block.
4. Right arm-left arm reversal.



John W. Watson, M.D.  
Assistant Professor  
Division of Cardiology  
University of Arkansas for Medical Sciences  
4301 West Markham  
Little Rock, Arkansas 72201





## EDITORIAL

# Myocardial Infarction

Alfred Kahn, Jr., M.D.

The problems of myocardial infarction are being attacked by newer methods, some of which pose more questions than they answer.

What of the problem of myocardial infarction with normal coronary arteries as demonstrated by coronary arteriography? Chesler, Matisonn, Lakier, Pocock, Obel and Barlow reviewed four cases in which acute myocardial infarction was thought to be a manifestation of the so-called Billowing Mitral Leaflet Syndrome. (*Circulation*, Volume 54, page 203, August, 1976). The cases consisted of a 40-year-old white nurse, a 21-year-old white man, a 23-year-old white man, and a 32-year-old black man, all with typical courses of myocardial infarction — and each with a negative arteriogram. All four patients had the billowing mitral leaflet syndrome. The authors acknowledge the absence of a good explanation for this association; they suggest that this might be a reflex from an overstretched chorda tendineae.

The problem of the false positive diagnostic tests has been discussed by Erikssen, Enge, Forang and Storstein (*Circulation*, Volume 54, page 371, September, 1976). They screened 2,014 healthy men in the middle aged group and of this obtained 105 men who had a typical history of angina pectoris, angina on a bicycle test, a positive electrocardiogram with exercise, or an abnormal resting electrocardiogram. Of extreme interest is that 36 men had less than 50% obstruction of any coronary artery. Another question that is raised by this paper is whether or not a 50% obstruction represents an important lesion; Erikssen, et al., report that one investigation reported an enhanced susceptibility to angina pectoris and myocardial infarction in patients with these minimal lesions. In any event, by the criteria held by many physicians, a 50% or less narrowing of one major coronary does not

constitute serious disease — and the explanation of the cause of angina pectoris in such cases remains to be explained by future studies.

A visual non-invasive means of detecting myocardial infarction has been sought by many investigators. Bruno, Cobb, Rivas and Goodrich (*Circulation*, Volume 54, page 71, July, 1976) have evaluated <sup>99m</sup> Technetium Stannous Pyrophosphate in acute myocardial infarctions. They feel that this method will selectively differentiate acute infarcts and thus differs from some methods which might demonstrate acute and chronic ischemic disease. This study was performed on 31 mongrel dogs and a scintillation camera was used. Using this method, Bruno, et al., was able to detect an infarct as small as one gram of tissue. The experimental technique employed in this study tried to take into consideration that in human infarcts the interruption of the coronary blood flow may be temporary or permanent. In animals in which a complete permanent coronary artery occlusion was established, the scans were negative at seven hours after the occlusion but were positive between 48 hours and 72 hours. In contrast in infarctions with temporary loss of blood supply, the scans were positive in seven hours. Caution in the interpretation of this type of scan is necessary as there may be very little uptake of technetium in some large infarcts 24 hours and 48 hours after onset of the infarct; it is presumed that this is due to loss of blood supply to the affected area. Probably using this technique quantitation of the infarct based on radioactivity is not reliable unless one takes into account whether the blood supply has been permanently or temporarily lost.

Another technique to search for myocardial infarction without using invasive techniques has been reported by Walsh, Harper, Resnekov and

Fill (*Circulation*, Volume 54, page 266, August, 1976) using Nitrogen-13 labeled ammonia. Studies were using experimental animals and humans. Using pigs, the results of Nitrogen-13 were compared to an injection microspheres labeled with radioactive technetium; they stated that the levels of activity were low in the infarcted area and high in the normal tissue. Using human subjects, Nitrogen-13 scintigrams showed abnormalities, in 27 of 28 patients the commonest change was a perfusion defect. Scintigrams were abnormal in three of six patients with unstable angina, three of three patients with dysrhythmia, six of seven patients with congestive failure. Sequential imaging was used to follow patients with apparent good results.

A very interesting case has been reported in the *J.A.M.A.* by Levene and Freeman which has implications which might be far-reaching. They

studied a case of a 41-year-old woman who had coronary artery spasm mediated by alpha adreno-receptors. The authors differentiate this type of spasm from that seen and reported in coronary angiography—in which nitrates relieve the spasm. This spasm was relieved by an injection of phentolamine and the patient's exercise tolerance could be improved by pre-treatment with phenoxybemyamine. This study might be a basis for re-evaluation of the old problem: can myocardial infarction be the result of severe emotional shock—in certain susceptible individuals.

The medical journals are filled with interesting articles on myocardial infarction. Although no detection, prevention, or treatment of myocardial infarction have been made, active provocative research is being published in rather astounding quantities. The best advances are not readily recognized at the present.



## MEDICINE IN THE



### THE MONTH IN WASHINGTON

The President's sacking of Health, Education and Welfare Department Secretary Joseph Califano has generated speculation on "why" to the measure of tons of national newsprint. But after a terse *ave atque vale* to the deposed Secretary, more prosaic Washington observers have quickly turned to handicapping his successor, Patricia Roberts Harris.

The 55-year-old Harris, a lawyer, brings to HEW much of the same Lyndon Johnson "fair deal" outlook as Califano. She is regarded as more of a team player, but her prickly independence is reminiscent of her predecessor. She can be expected to enthusiastically support the Administration's goals at HEW, including the establishment of a separate Department of Education, a reorganization that Califano not so privately opposed to the discomfiture of the White House.

Harris hasn't been rated as one of the heavy-weights of the Cabinet, perhaps because her De-

partment ranks last in importance. Now she has her chance. Long active in the Democratic Party, she served two years as Ambassador to Luxembourg in 1965-67 and was later an alternate delegate to the United Nations. She was an attorney with the Justice Department in the early 1960's, and later became a successful private lawyer in a Washington, D. C., law firm. She has been a director of some of the nation's largest corporations.

In the press brochure distributed at her news conference following announcement of her appointment to HEW, copies of news stories about Harris were included. They carried such headlines as "Forceful HUD Secretary is turning her critics around; Patricia Harris, HUD's Velvet-gloved Iron Hand; HUD Secretary Harris Steps Quickly Into The Fray; and Patricia Harris—The No-Nonsense Chief of HUD."

"Abrasive," "Pugnacious," "Spitfire" were some of the adjectives used in the articles to describe



Harris; apparently descriptions with which she is comfortable.

As a "Team Player" Harris said nothing remotely controversial at the news conference. She has filled out and returned an inane White House questionnaire sent to all Cabinet members asking them to rate their subordinates on a variety of qualities. Califano had refused to honor the questionnaire.

But there is still a lot of head scratching in Washington. The Administration's two major health initiatives—hospital cost containment and the national health plan—are widely and strongly identified in the Congress with Califano. Harris has no expertise in health and no strong clout with the small but powerful "Old Boy" Democrat band of brothers in the Congress. And it will take her months to learn the ropes.

\* \* \* \*

An amended version of the Administration's Hospital Cost Containment Bill (H. R. 2626) has cleared the House Ways and Means Committee. In the Senate, the Finance Committee earlier rejected a modified version of the Administration measure offered by Sen. Gaylord Nelson (D.-WI).

First, the Senate Finance Committee stemmed the Administration by rejecting the proposal 11-9. Six days later Ways and Means kept the plan alive with a 22-14 approval of an amendment-laden measure.

There's no chance of floor action in either Chamber before September. The high priority Presidential plan to impose federal controls on hospital revenue increases if they top a certain level was approved by the Senate last year, but the bill failed to reach the House floor.

Despite the Finance Committee vote, an attempt will be made to bring the bill up in the Senate. The outlook in House and Senate is for very close votes.

The vote in Ways and Means, 22-14, wasn't a true test of Committee sentiment on the measure. For two months Committee Chairman Al Ullman (D.-OR), was unable to bring the bill before the Committee for action because a majority of the panel was opposed to the bill. Phone calls from President Carter switched one or two Democratic votes. The plea was to allow the full House to vote on the issue.

A 20 to 16 vote approving an "open rule" for the proposal was regarded as more indicative of Committee feelings. The "open rule" allows

unrestricted amendments that could weaken a bill and is not sought usually by backers of legislation.

The Senate Finance Committee's turn-down of the plan was a shock to the White House which thought it had sewed up the powerful Committee with the commitment from Chairman Russell Long (D.-LA), a previous foe of the plan, to support it. Long did cast his vote with the Administration, but it wasn't enough to win the day. And it was apparent he had twisted no arms to see it his way.

The successful fight against the Administration plan, offered by Sen. Nelson, was led by Sen. Robert Dole (R.-KS), top GOP member of the Committee.

Dole suggested that if Congress adopted the hospital bill some future President might have to go the "mountain top" a la President Carter and try "to figure out what happened when we adopted the Nelson Price Control Amendment to hospital care and we started rationing health care in this country."

"Government obviously is not the best manager in the world," Dole said, "yet in this bill it attempts to reach out and manage 6,000 hospitals in this country."

On the key vote, all eight Committee Republicans plus Sens. Talmadge, Lloyd Bentsen (D.-TX), and Mike Gravel (D.-AL) voted no.

Before voting on final passage, the House Ways and Means Committee spent several days approving a series of amendments softening the impact of the bill. A Committee member complained that as a result 65 percent of the nation's hospitals wouldn't be covered. Among other amendments adopted were a lifting of the ceiling on revenue increases to 11.6 percent a year; a requirement that Congress be given notice by HEW of a move to trigger controls and an opportunity to block them; inclusion of all federal hospitals—including Veterans' Administration facilities—in the control plan; exclusion of philanthropic contributions to hospitals in tabulating revenue; and exclusion of the costs of providing charitable care.

The Bill also exempts or gives special consideration to many types of health facilities—certain tertiary care centers, children's hospitals that give charity care, Shriners' hospitals, hospitals with lower than average lengths of stay, and Alaskan and Hawaiian hospitals—due to

increasing populations and the high costs of living.

The major "pass through" in the plan, part of the bill from the beginning, is the exclusion of wage increases for nonsupervisory hospital personnel. This was necessary to secure labor's support.

The Administration's original proposal last year provided immediate imposition of controls, but it was forced to accept a standby plan triggering controls only if the Voluntary Effort failed to bring increases down to a certain level.

\* \* \* \*

Interns, residents and other housestaff who choose to organize formally should be able to avail themselves of the rights established for employees by the National Labor Relations Act, the American Medical Association has told the Congress.

Approval was urged of legislation granting housestaff this right by William Mangold, Jr., M.D., Vice Chairman of the AMA's Council on Legislation. He said that to argue housestaff are only "students" is to ignore the inherent duality of graduate medical education.

"Generally, an individual having the status of an employee is subject to supervision," said Dr. Mangold. "Employees receive compensation for their services, and their services are expected to have value to their employers. Employers are required to withhold federal and state income taxes and to pay Social Security taxes in connection with wages or salaries paid to employees. Each of the foregoing applies to the relationship that exists between employing institutions and interns and residents."

He told a House Labor Subcommittee that compensation is provided by hospitals to housestaff just as other employers pay for value received. "The motivation on the part of the hospital is not just to subsidize graduate medical education but to pay for services."

Recognition of the importance of the educational component does not detract from the residents' status as employees, Dr. Mangold said, "but only acknowledges the dual role of the physician during the period of internship and residency."

This duality should not detract from the physician's rights when he or she is employed, he added. "Among these rights is the freedom to organize and bargain collectively if the physician

so chooses."

At the same time, the AMA witness said NLRB coverage for housestaff carries with it special responsibilities. "Collective bargaining and negotiations must be conducted judiciously and contained within proper limits by the respective parties. The exercise of mature judgment and experience, with special regard for the educational and patient care responsibilities of both employee and employer, will be necessary. If not, the result could be disruption of necessary patient care and interference with the quality of graduate medical education. The pursuit of legitimate objectives should not dilute the quality of patient care or graduate medical education."

\* \* \* \*

The Senate Finance Committee has voted to bar recognition of Medicare-Medicaid percentage arrangements for hospital-based specialists. The provision, part of an overall Medicare-Medicaid measure, would generally become effective on October 1, 1979.

Percentage arrangements entered into by hospitals and physicians before January 1, 1979 could be recognized for Medicare-Medicaid reimbursement purposes until January 1, 1982, or the earliest date they could be terminated by the hospital, whichever is earlier.

The Committee suggested that HEW give serious consideration to providing that full fees be paid to an anesthesiologist only where he personally performs all the professionally appropriate pre- and post-anesthetic services and carries out the most demanding procedures in connection with administration of the anesthesia for no more than two patients. Provision is made for lesser payments where the anesthesiologist directs or supervises nurse anesthetists.

\* \* \* \*

The House has passed the \$100 million Public Health Service (PHS) Act Amendments extending for three years the authority for PHS Health Information Programs. The bill also creates new PHS authority for prevention, cure, and control of digestive diseases. The bill authorizes \$94.5 million for health information and promotion programs, authorizes \$5.7 million for a National Digestive Disease Information Clearinghouse, and provides for grants to improve education and training in digestive diseases.

\* \* \* \*



The House has approved the Administration's request for a separate Department of Education, but loaded the bill with so many controversial amendments the final outcome in Congress remains in doubt. The Senate approved the plan earlier this year. The House vote was 210-206. A House-Senate Conference must now work out differences in the measure.

\* \* \* \*

The Department of Energy (DOE) has exempted physician offices from temperature restriction requirements (78 degrees, summer; 65, winter).

The regulations place temporary restrictions on temperature settings for heating, cooling, and hot water in commercial, industrial and other non-residential buildings. Under previously proposed rules, DOE had neglected to exempt physician offices, a position strenuously objected to by the AMA.

The final rules provide an exemption for buildings (or portions thereof) "where maintenance of certain temperature levels is required ... to protect the health of persons in offices of

physicians, dentists, and other members of (licensed) health care professions ..."

\* \* \* \*

### Ophthalmology Head Appointed

Dr. John P. Shock has been named chairman of the Ophthalmology Department at the University of Arkansas College of Medicine. He has the rank of professor and is chief of Eye Service at the University Hospital. Dr. Shock was graduated from the United States Military Academy at West Point in 1959 and from Duke University Medical School in 1966. Dr. Shock completed his internship and residency at Walter Reed Army Medical Center in 1970 at Washington. Dr. Shock was assistant chief of Ophthalmology at Letterman Army Medical Center at San Francisco for five years. He was transferred to Sam Houston in 1976 where he was chief of Ophthalmology at Brooke Army Medical Center. Dr. Shock held the rank of Colonel. He has served as president of the Society of Military Ophthalmologists.

Dr. Shock holds three patents on an ultrasonic cataract removal devices.



## THINGS TO COME



### NOVEMBER 1979

The Southern Medical Association's Annual Scientific Assembly is to be held at the MGM Grand Hotel in Las Vegas on November 4-7. This assembly provides interdisciplinary scientific study and CME courses for the AMA Physician's Recognition Award.

A symposium on the Initial Management of Trauma will be held at the Skirvin Plaza Hotel in Oklahoma City, Oklahoma, November 28-30, 1979. This course for the primary care physician and the emergency physician qualifies for 19 hours prescribed credit, AAFP, and Category I, AMA.

For information contact: Office of Continuing Medical Education for Physicians, Post Office

Box 26901, BMSB 343A, University of Oklahoma College of Medicine, Oklahoma City, Oklahoma 73190.

### FEBRUARY 1980

The 43rd Annual New Orleans Graduate Medical Assembly is to be held February 27 through March 2, 1980 in the Fairmont Hotel, New Orleans. For further information write: Room 1538, Tulane Medical Center, 1430 Tulane Avenue, New Orleans, Louisiana 70112 or phone (504) 525-9930.

### APRIL 1980

A Postgraduate Course in Cytopathology is to be given at The Johns Hopkins University School of Medicine and The Johns Hopkins Hospital in Baltimore, Maryland, April 14-25, 1980. Applications are to be made before March 7, 1980. For more details write: John K. Frost, M.D., 610 Pathology Building, The Johns Hopkins Hospital, Baltimore, Maryland 21205.

### APRIL 1980

The Annual Session of the Arkansas Medical Society will be held April 20-23, 1980, at the Arlington Hotel in Hot Springs.

# keeping up

## Category 1 Continuing Medical Education Programs Available in Arkansas

### DRUG INTERACTIONS

Presented by Mike Pilcher, M.D., and Bill Freeman, R.Ph., 6:00 p.m., November 19, 1979, Memorial Hospital, North Little Rock. One hour Category I credit.

### NUCLEAR MEDICINE SYMPOSIUM ON NUCLEAR CARDIOLOGY

Presented by W. Turner Harris, M.D., and Jerry L. Prather, M.D., 9:00 a.m. to 3:00 p.m., December 1, 1979, St. Vincent Infirmary, Room E155, Education Wing. Five hours Category I credit. \$25 registration fee includes lunch.

### DIABETIC RETINOPATHY

Presented by Jan Scruggs, M.D., and Richard Henry, M.D., 6:00 p.m., December 17, 1979, Memorial Hospital, North Little Rock. One hour Category I credit.

### PEDIATRIC CONTINUING EDUCATION DAYS

Presented by Donald E. Hill, M.D., November 2, 1979, 8:00 a.m. to 5:00 p.m. (includes Ted

Panos Memorial Lecture) and November 3, 1979, 8:00 a.m. to 11:45 a.m., Arkansas State Hospital Auditorium. Eleven hours Category I credit and eleven hours Prescribed AAFP. \$50 registration fee includes luncheon on November 2.

### INTERVENTIONAL RADIOLOGY SEMINAR

Presented by Eugene F. Binet, M.D., and Phillip L. Smith, M.D., November 3, 1979, 12:30 p.m. to 5:00 p.m., and November 4, 1979, 9:00 a.m. to 3:30 p.m., Little Rock Hilton Inn. Nine hours Category I credit. \$50 registration fee for physicians; \$20 for residents and interns (includes luncheon on November 3rd).

### DERMATOLOGY FOR THE FAMILY PHYSICIAN SEMINAR

Presented by Ben N. Saltzman, M.D., November 10, 1979, 9:00 a.m. to 4:00 p.m., Education II Amphitheater, UAMS Campus. Six hours Category I credit and six hours Prescribed AAFP credit. Registration fee \$35.

## RECURRING EDUCATION PROGRAMS

Unless otherwise indicated, programs are for one to one and one-half hour Category I credit.

### LITTLE ROCK — BAPTIST MEDICAL CENTER

*Pulmonary Care Conference*, each Tuesday, 12:00 noon to 1:00 p.m., Dining Room #4.

*Central Arkansas Primary Care Conference*, second Tuesday, 7:00 p.m. to 9:00 p.m., Baptist Medical Center Auditorium. Two hours Category I credit. A meal is provided.

*Cardiopulmonary Resuscitation Course*, second Wednesday, 6:00 p.m. to 12:00 p.m., Human Resource Development area. Six hours Category I credit. A meal is provided.

*Morbidity and Mortality Conference*, first Thursday, 8:00 a.m. to 9:00 a.m., Conference Room #1.

*Surgery Conference*, each Thursday except first Thursday, 8:00 a.m. to 9:00 a.m., Conference Room #1.

### LITTLE ROCK — ST. VINCENT INFIRMARY

*Interhospital GI Problems Conference*, first Monday, 6:00 p.m.

*Peripheral Vascular Disease Conference*, second Monday, 6:00 p.m.

*Interhospital Urology Grand Rounds*, first Tuesday, 5:30 p.m.

*Neuropathology Conference*, third Tuesday, 5:00 p.m.

*Cleft Palate Conference*, November 14, 1979, 12:30 p.m.

### LITTLE ROCK — UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES

*Internal Medicine Grand Rounds*, each Thursday, 8:00 a.m. to 9:00 a.m., Education I Auditorium.

As organizations accredited for continuing medical education by the Liaison Committee on Continuing Medical Education, the organizations named certify that these continuing medical education activities meet the criteria for the credit hours specified in Category I of the Physician's Recognition Award of the American Medical Association.





## PERSONAL AND NEWS ITEMS

### **Dr. Hodges Honored**

Dr. Jerry F. Hodges was recently named by the United States Junior Chamber of Commerce as one of the "Outstanding Young Men of America" for 1979. The award is presented annually to young men for excellence in professional endeavors, in civic activities, and in making their cities and the country a better place in which to live.

Dr. Hodges is in family practice in Dardanelle.

### **Reception Honors Physician**

Dr. Benedict F. Pupsta of Clarendon was honored with an appreciation dinner by Mid-Delta Community Services in recognition of his services and devotion to the people of Monroe County. Dr. Pupsta was given a plaque commemorating his services.

### **Physician Named to Board**

Dr. John Hearnberger of Nashville was appointed to the county hospital Board of Governors. Dr. Hearnberger is the first physician to serve on the hospital board.

### **Physician Locates**

Jackson County has a new physician. Dr. Raymond E. Lopez, specializing in orthopedic surgery, is located at the Harris Hospital and Clinic in Newport. He was formerly at the Freeport Clinic in Freeport, Illinois.

### **Dr. Turner Announces Associate**

Dr. Frederick C. Turner has announced the association of Dr. Peter A. MacKercher in the practice of internal medicine, with a speciality in gastroenterology. Their offices are located at Pigeon Creek Medical Center, north of Mountain Home.

### **Physician Returns to Practice Medicine**

Dr. Robert L. Baker has set up practice in Mountain Home after retiring from the United States Navy Medical Corps. Dr. Baker is located at 10 Medical Plaza and specializes in obstetrics and gynecology.

### **Physician Honored at Meeting**

Dr. George Queen has been honored by the Quorum Court in Garland County. Dr. Queen was given recognition for providing free medical examinations to the Garland County deputies.

### **4-H Health Award Winner Announced**



Lenya Foster of Washington County was winner of the Health Award in the 4-H Orama held in Conway in August. Dr. Ben N. Saltzman, chairman of the Rural Health Committee of the Society, presented the award.

### **Dr. Joel P. Cook Locates**

Dr. Joel P. Cook has begun family practice at the Newport Hospital. He is a native of Crossett and received his medical degree from the University of Arkansas Medical School in 1978 and his internship was at St. Vincent Infirmary.

### **Pocahontas Natives Set Up Family Practice**

Drs. Andrew Jansen and Danny Holt, both natives of Pocahontas, have located in their hometown for practice with the Pocahontas Family Practice Clinic.

### **Physicians Locate**

Dr. William L. Berry has joined the Hospital Medical Staff as Staff Radiologist in Yell County Hospital. He received his training at the University of Arkansas Medical Center in Little Rock.

Dr. Dennis Berner has joined the Millard-Henry Clinic at Russellville specializing in internal medicine. Dr. Berner is a graduate of the University of Arkansas College of Medicine.

Dr. Edward Fine has begun practice in ob-

stetrics and gynecology in Helena. Dr. Fine came to Arkansas from New Jersey.

Dr. Mike Bridges has opened his general family practice at the Bald Knob Medical Center.

#### Research Project Grants Awarded

The Southern Medical Association has announced the SMA Research Project Fund recipients for the 1979-80 season. These grants encourage research for Graduate Medical students and other physicians entering practice.

Dr. James H. Fowler received an award for "Total Laryngectomy and Neoglottis Construction in Canines." Dr. David E. Wennerstrom's project receiving recognition was "Pathogenesis of Group B Streptococci in Mouse Lung." Both physicians are with the University of Arkansas School of Medicine.

#### Physician Locates

Dr. Carlton Newsome has joined the staff of the Smackover Family Practice Clinic. Dr. Newsome is a native of Sparkman.

#### Dr. Ford Announces Associate

Dr. Bill Ford announces the association of Dr. Ray E. Stahl in the practice of general surgery. Their offices are located at 402 East Sixth Street in Mountain Home.

#### Dr. Alston is Winner

Dr. Herman D. Alston of Jonesboro was a winner in the Colgate Dinah Shore Winners Circle Sweepstakes. Dr. Alston won a 1979 American Motors Spirit.

#### Portland Physician

Dr. Angelo Llana of Virginia, Minnesota, has located in Portland. He replaces Dr. Solomon Cutcher as the physician at the Portland Health Care Center.

#### Hope Watermelon

Dr. Lynn Harris of Hope visited the Society headquarters office in Fort Smith in September. He presented the staff a Hope watermelon weighing one hundred pounds.



Society staff members with Hope melon: Cliff Long, Executive Vice President; Sue Watts, Peggie Branham, Ann Lansdell, Patricia Williams, and Leah Richmond, Associate Executive Vice President. Staff members not present when photo was taken are Ken LaMastus, Public and Professional Service Coordinator, Dee Thompson, and Janet Sharum.





## NEW MEMBERS

### **Dr. Jerry Franklin Hodges**

Dr. Hodges is a native of Russellville, Arkansas, and a member of the Yell County Medical Society. Dr. Hodges received a B.S. degree from Arkansas Tech University. He was graduated from the University of Arkansas School of Medicine in 1978. He completed a family practice residency with the Area Health Education Center in Fort Smith.

Dr. Hodges is in Family Practice at Dardanelle Clinic, P.A., located at Highway 22 West in Dardanelle.

### **Dr. Glen A. Rountree**

Dr. Rountree is a native Arkansan and a new member of the Miller County Medical Society. He was graduated from Lamar University in Beaumont, Texas, with a B.S. degree in 1964. Dr. Rountree was graduated from the University of Texas Medical Branch in Galveston in 1968. Following his internship, Dr. Rountree served approximately three years in the United States Army. From 1972 until 1976, he was in residency training at the University Medical Center in Little Rock. He has been in practice in Texarkana since 1976.

Dr. Rountree is board certified in Urology and is a member of the American Board of Urology. He is associated with Southern Clinic at 300 East Sixth Street in Texarkana.

### **Dr. Charles M. Poynor**

Dr. Poynor is a new member of the Boone County Medical Society. He is a native of Eureka Springs. He attended Oklahoma State Northeastern and was graduated in 1944 from the University of Arkansas School of Medicine in Little Rock. Dr. Poynor has been in Family Practice for thirty years.

Dr. Poynor is a member of the Academy of Family Physicians and his office is located at 124 East Church in Berryville.

### **Dr. Shyam P. Mehta**

Dr. Mehta is a new member of the Jefferson County Medical Society. He was born in Rohri, Pakistan, and attended Hindu College in Delhi, India. His M.D. degree was received in 1967 from the G.S.U. Memorial College, Lucknow University, Kampur, Uttai Pradesh. He interned at Saint Francis Hospital, Evanston, Illinois. He was Chief Resident in Internal Medicine at Hurley Hospital in Flint, Michigan, and had a Fellowship in Nephrology at the University of Michigan Hospital, Ann Arbor. Dr. Mehta is an associate member of the American College of Physicians.

Dr. Mehta specializes in Internal Medicine and Nephrology at 1801 West 40th Avenue, Suite 1A, in Pine Bluff.

The Crawford County Medical Society has added two new members to its membership roll. They are:

### **Dr. Kevin Patrick Crowley**

Dr. Crowley specializes in Internal Medicine and is located at 20th and East Main in Van Buren. Dr. Crowley was born in Council Bluffs, Iowa, and was graduated from Creighton University School of Medicine in Omaha in 1976. His internship and residency were at Creighton Affiliated Hospital.

Dr. Crowley is an associate member of the American College of Physicians.

### **Dr. Henry N. Edwards**

Dr. Edwards is also in Internal Medicine and is located at 20th and Chestnut Street in Van Buren.

Dr. Edwards is a native of Kansas. Dr. Edwards was graduated from the University of Kansas with a B.S. degree in Pharmacy in 1973. His M.D. degree was received from the University of Kansas School of Medicine in Kansas City. He interned at the University of Kansas and his residency was at Wesley Medical Center in Wichita.

Dr. Edwards is also an associate member of the American College of Physicians.

Garland County announces two new members to their medical society:

### **Dr. Elton H. Stecker, Jr.**

Dr. Stecker is a native of New York. He was graduated from Andrews University with a B.A. degree in 1957. Dr. Stecker took post-graduate work at the University of Michigan and was graduated in 1963 from Loma Linda University School of Medicine in Los Angeles. Dr. Stecker

## NEW MEMBERS

completed his internship at Hinsdale Sanitarium and Hospital in Illinois. He is board certified in Family Practice and is a member of the American Academy of Family Physicians.

Dr. Stecker began practice in Bakersfield, California. From 1964 until 1977, he was in Makwasa and Blantyre, Malawi, Africa. While in Africa, he had a teaching appointment with Malamulo Hospital and was Medical Director of Malamulo Leprosarium. From 1977 to 1978, he was in Hinsdale, Illinois, with the Hinsdale Family Practice Residency program. He served as Assistant Director. He was also Medical Director of the Adventist Health Center in Hinsdale.

Dr. Stecker is in Family Practice at 1315 Central Avenue in Hot Springs.

### **Dr. Rheeta Minon Stecker**

Dr. Stecker is a native of South Carolina. She received her B.A. degree from Andrews University in 1957. Dr. Stecker did post-graduate work at the University of Michigan and was graduated in 1963 from Loma Linda University School of Medicine in Los Angeles. She completed her internship at Hinsdale Sanitarium and Hospital in Illinois. Dr. Stecker is board certified in Family Practice and is a member of the American Academy of Family Physicians.

Dr. Stecker practiced one year in Bakersfield, California. From 1964 until 1977, she was in Makwasa and Blantyre, Malawi, Africa. In Africa, she was associated with the Malamulo Hospital. In 1977 and 1978, Dr. Stecker was an Assistant Director of the Family Practice Residency Program in Hinsdale, Illinois.

Dr. Stecker is in Family Practice at 1315 Central Avenue in Hot Springs.

Union County has announced the addition of two new members to their medical society:

### **Dr. Dao Q. Kieu**

Dr. Kieu was born in Vietnam. He was graduated from Hanoi University Faculty of Sciences in 1952 with a P.C.B. degree. Dr. Kieu was graduated from the University of Saigon School of Medicine in 1959. He completed an internship at the University of Arkansas School of Medicine in 1978 at Little Rock. Dr. Kieu practiced in Vietnam from 1959 until 1975. From 1968 to 1975, he was Chief of the Bureau of Occupational Health, Vietnam Labor Ministry.

Dr. Kieu is in general practice at Cabun Clinic in Hampton.

### **Dr. Cuong Trinh**

Dr. Trinh was born in Hanoi, Vietnam, and attended the College of Sciences at the University of Saigon in South Vietnam. He was graduated in 1965 from the University of Saigon School of Medicine. Dr. Trinh completed an internship at the University of Arkansas School of Medicine in 1977 at Little Rock. During the years 1965 through 1975, Dr. Trinh was in general practice at Bienhoa, South Vietnam, and was in the Vietnam Air Force Medical Corps.

Dr. Trinh is now in general practice at the Cabun Clinic in Hampton.

\* \* \* \*

The Pulaski County Medical Society has added four active members to its roll:

### **Dr. Joe Lee Buford**

Dr. Buford is a native Arkansan. He received a B.A. degree from the University at Fayetteville in 1974 and was graduated from the College of Medicine in Little Rock in 1978. His internship was at St. Vincent Infirmary, Little Rock.

Dr. Buford is in the general practice of medicine at 1801 Maple in North Little Rock.

### **Dr. John R. E. Dickins**

Dr. Dickins is a native of Arkansas and was graduated from Vanderbilt University in Nashville, Tennessee, in 1969 with a B.A. degree. He was graduated from the University of Arkansas School of Medicine in Little Rock in 1973. His residency training in surgery and otolaryngology was at Baylor Affiliated Hospitals in Houston. He had a fellowship in Neurotology with the Otology Group in Nashville.

Dr. Dickins is in practice at the Ear-Nose and Throat Clinic, located in the Medical Towers in Little Rock. He is board certified in Otolaryngology and is a member of the American Academy of Otolaryngology.

### **Dr. Wandal DeWand Money**

Dr. Money was born in Florida and attended Central High School in Little Rock. He was graduated in 1969 with a B.S. degree from Bethany Nazarene College in Oklahoma. Dr. Money was graduated from the University of Arkansas School of Medicine in Little Rock in 1973. He interned at the University of Arkansas School of Medicine and his residency was at the same institution, specializing in Neurology.

Dr. Money was assistant professor of Neurology



## NEW MEMBERS

at the University of Arkansas School of Medicine from 1977 to 1978. He is a member of the American Academy of Neurology and specializes in Neurology at 2002 Fendley Drive, North Little Rock.

### **Dr. Carroll Edward Corbell**

Dr. Corbell was born in Mineral Springs, Arkansas, and was graduated from the University of Arkansas in Fayetteville in 1962 with a BSCE and a MSCE degree. Dr. Corbell received his M.D. degree at the University of Arkansas School of Medicine in Little Rock in 1974. His internship was at St. Vincent Infirmary and his residency in general surgery was at Louisiana State University in Shreveport.

Dr. Corbell is in general practice located at 500 South University, Suite 505, in Little Rock.

Pulaski County has also added two new courtesy members:

### **Dr. Dan Martin**

Dr. Martin is a native of Camden and was a graduate of the University of Arkansas School of Medicine in 1979. He is an intern at the University of Arkansas College of Medicine specializing in Internal Medicine.

### **Dr. Robert Eugene Harrell, Jr.**

Dr. Harrell is a native of Wynne. He is a 1977 graduate from the University of Arkansas College of Medicine and specializes in Family Practice. He is a resident at the University in the Department of Family Practice.



**DISCUSSION:** The impressive features of the trace include P-wave inversion in Lead I and reversol in the appearance of the right and left precordial leads. P-wave inversion in Lead I most commonly results from right arm-left arm lead reversol but the precordial leads should be of their usual configuration. Junctional rhythms can also give P-wave inversion as can dextrocardia. Dextrocardia will also give the reversol in the appearance of the left and right precordial leads with positive deflections in the right precordial leads and negative deflections in the left precordial leads as seen in this trace. Dextrocardia is often seen with associated defects such as pulmonic stenosis which this patient turned out to have to a mild degree. The patient's trace appeared normal when done with intentional right arm-left arm lead reversol and with the precordial leads placed on the right side of the chest. The best response is dextrocardia.



November, 1979

# THE JOURNAL OF THE Arkansas MEDICAL SOCIETY

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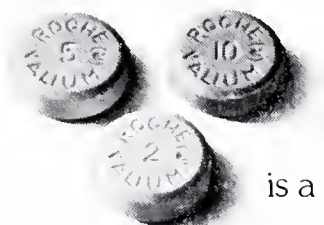
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**Warnings:** Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms (similar to those with barbiturates and alcohol) have occurred following abrupt discontinuance (convulsions, tremor, abdominal and muscle cramps, vomiting and sweating). Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

**Usage in Pregnancy:** Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

**Precautions:** If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed; drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

**Side Effects:** Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

**Dosage:** Individualize for maximum beneficial effect. *Adults:* Tension, anxiety and psychoneurotic states, 2 to 10 mg b.i.d. to q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed, adjunctively in skeletal muscle spasm, 2 to 10 mg t.i.d. or q.i.d.; adjunctively in convulsive disorders, 2 to 10 mg b.i.d. to q.i.d. *Geriatric or debilitated patients:* 2 to 2½ mg, 1 or 2 times daily initially, increasing as needed and tolerated. (See Precautions.) *Children:* 1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use under 6 months).

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NEWS—Our readers are requested to send in items of news, also marked copies of newspapers containing matter of interest to the membership.

SCIENTIFIC ARTICLES	
Clinical Application of the Auditory Averaged Electroencephalic Response (AER) .....	229
Robert G. Ivey, Ph.D.	
Withdrawal Symptoms from Combined Alcohol and Minor Tranquilizer Intake .....	232
Robert Franken, M.D., and F. E. Seale, M.D.	

FEATURES	
Pediatric Review: "Management of the Patient With Suspect Immune Deficiency" .....	235
Russell W. Steele, M.D., and Paul Martin Fiser, M.D.	
Office: Orthopaedics: "Megalodactylism—Macrodactylism—Local Giantism of Digits" .....	237
Kenneth G. Jones, M.D.	
ECG of the Month .....	239
John Watson, M.D.	
Public Health At a Glance: "Short-Course Chemotherapy for Tuberculosis" .....	240
William W. Stead, M.D., and Asim K. Dutt, M.D.	
Editorial: "Endorphins" .....	242
Alfred Kahn, Jr., M.D.	
Medicine in the News .....	244
Keeping Up .....	245
Personal and News Items .....	246
Things to Come .....	247
New Members .....	247

## Clinical Application of the Auditory Averaged Electroencephalic Response (AER)

Robert G. Ivey, Ph.D.\*

### ABSTRACT

This article discusses early identification of hearing impairment and the high risk register for hearing. The usefulness of the averaged electroencephalic response is demonstrated with cases including a young infant, a difficult-to-test child and an adult with an acoustic tumor.

In order to avoid language, speech, social and emotional retardation it is important to assess a child's hearing as soon as it is questioned so that habilitative or rehabilitative steps may be taken if a hearing loss is found. The Joint Committee on Newborn Hearing Screening was formed in 1969 by representatives from the American Academy of Pediatrics, the American Academy of Ophthalmology and Otolaryngology and the American Speech and Hearing Association.<sup>1</sup> This committee recommends the use of a high risk register initially, at birth, for categorizing a neonate either at-risk or not at-risk for hearing impairment. The presence of one or more of the following items will result in an at-risk for hearing classification:

1. Family history of congenital sensory-neural hearing loss in a first cousin or closer;
2. Maternal rubella (any trimester) or other non-bacterial intrauterine fetal infection (e.g., cytomegalic inclusion virus, herpes infection);
3. Defects of the ear, nose or throat (any first arch syndrome including malformed, low set, or absent pinnae, cleft lip or palate);
4. Birthweight less than 1500 grams;
5. Bilirubin count greater than 20 mg/100 ml serum.

Any child found to be at-risk for hearing should be evaluated audiologically. The committee also recommended a mandatory follow-up within one month for any infant classified as at-risk so that progressive hearing losses would be identified.

Hearing assessment in young children requires special training and techniques. For example: Play audiometry uses a game-like paradigm that maintains the child's interest in responding to the tones of the test. Conditioned orientation response (COR) audiometry uses lighted toys as a reward for looking in the proper direction to sounds presented in a sound field through speakers. Children under six months of age who are not expected to turn toward sound may be tested with a variety of behavioral observation techniques that result in a gross estimate of hearing sensitivity.

Neonates, infants and others who are unable to respond behaviorally to test stimuli may be tested using the auditory averaged electroencephalic response. The term "averaged electroencephalic response" (AER) is a general term which may be applied to any electrical response from the brain that is resolved from the background EEG activity by averaging a number of EEG samples together. These responses include electrocochleography, the brainstem electric response (BSER), the middle components, the late components, contingent negative variation (CNV) and P<sub>300</sub>. The averaging process adds the EEG samples together causing the responses to the stimuli, which is the same each time, to grow larger and at the same time the ongoing EEG activity which is different each time, to grow smaller. This process allows the response to be separated from the larger voltage ongoing EEG activity. This is a non-invasive approach that allows the quantification of high and low frequency hearing sensitivity in each ear independently.

High frequency hearing is evaluated using clicks or very short high frequency tones and the BSER. The BSER occurs within the first ten milliseconds after the onset of the signal and arises from the brainstem. Low frequency hearing is evaluated using short low frequency tones and the middle-component response. The middle component occurs within the first 100 milli-

\*c/o R. T. Woods, M.A., C.C.C., Little Rock Ear, Nose and Throat Clinic, 500 South University, Little Rock, Arkansas 72205.



seconds following the onset of the signal and arises from various generators including the primary auditory cortex.

Case A is a two-month-old whose hearing was questioned by her mother. There was no family history of hearing loss. She gave no observable responses to speech or frequency-modulated tones in a sound field. Tympanograms showed good mobility and normal middle ear pressure bilaterally.

Figures 1 and 2 show the results of the AER testing. Identifiable brainstem responses were seen down to 20 dB HL bilaterally (Figure 1). This indicates high frequency hearing that is within normal limits bilaterally. Figure 2 shows middle component responses to 500 Hz tone pips down to 40 dB HL bilaterally. The patient awoke from natural sleep wanting to be fed, therefore testing was terminated before the 20-dB HL test condition was done. These results indicate hearing that is well within normal limits for high and low frequency sounds bilaterally.

Case B was a difficult-to-test child, 3½ years old. He had been tested several times with various techniques resulting in estimates of hearing sensitivity ranging from normal to deaf.

The AER results show identifiable brainstem responses at 90 dB HL bilaterally and no response at 80 dB HL (Figure 3). This indicates a severe to profound high frequency hearing loss. The middle component responses to low frequency stimuli are also seen at 90 dB HL and not at 80 dB HL (Figure 4). These results are consistent with a bilateral severe to profound sensorineural hearing loss. Now that the hearing loss is identified a great deal of work must be done with this child in order to offset his 3½ years of auditory deprivation.

The use of the AER in determining hearing sensitivity is only one aspect of the procedure. The brainstem AER has been shown to be the most reliable non-invasive test of auditory nerve lesions. The AER is useful in detecting and monitoring disorders such as multiple sclerosis,

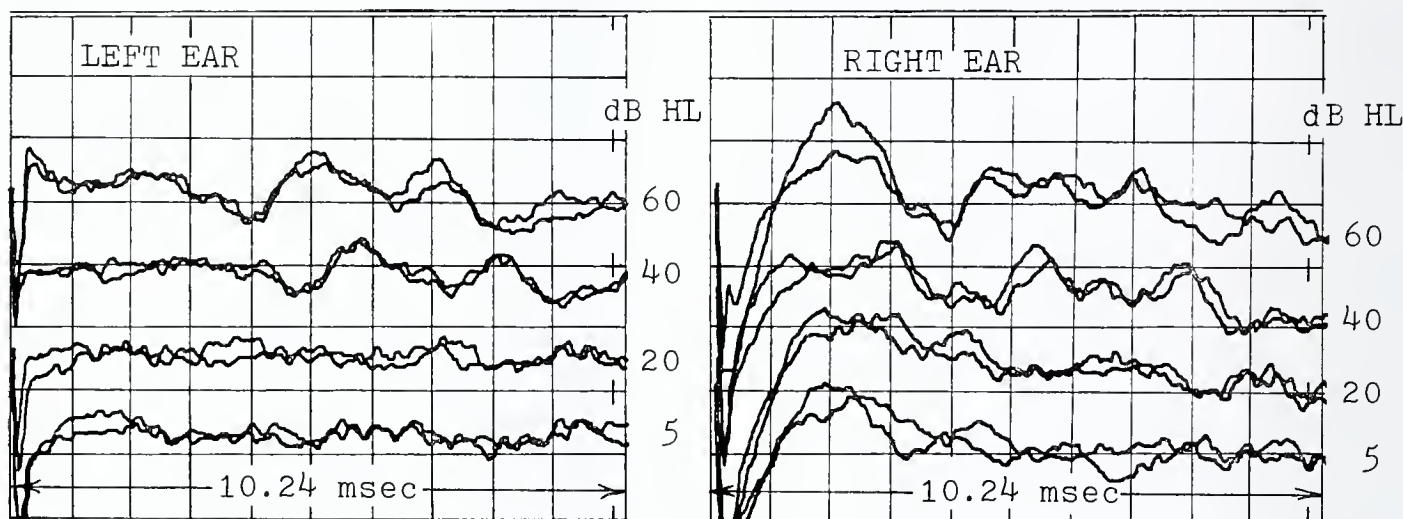


Figure 1.  
Case A. Intensity series using the brainstem AER with click stimuli to assess high frequency hearing.

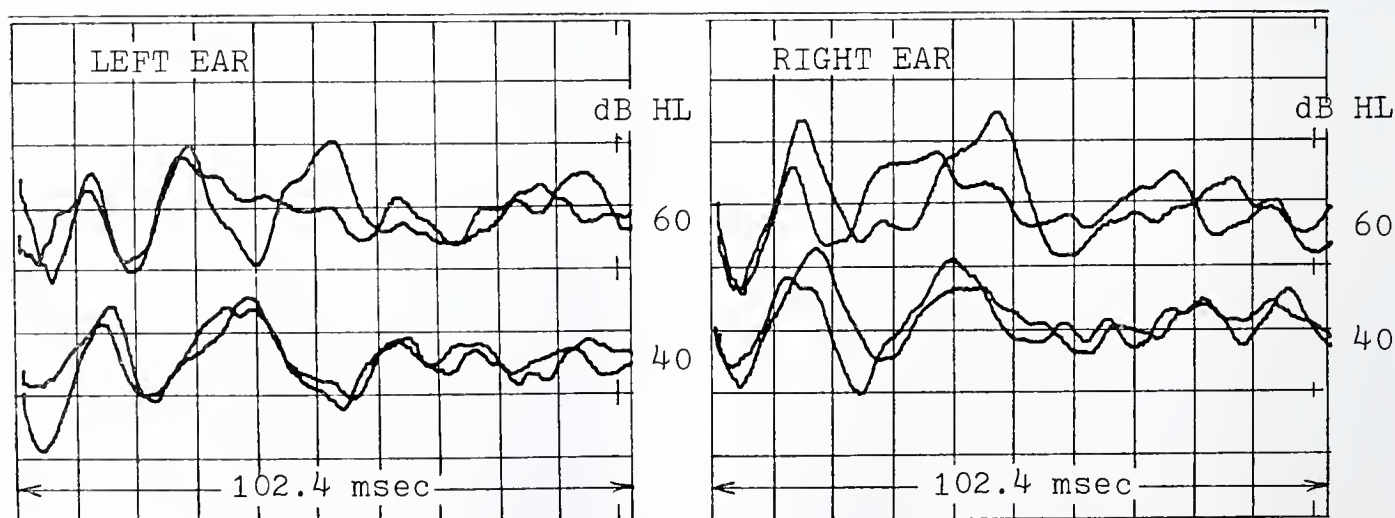


Figure 2.  
Case A. Intensity series using the middle component AER with 500 Hz tone pips to assess low frequency hearing.

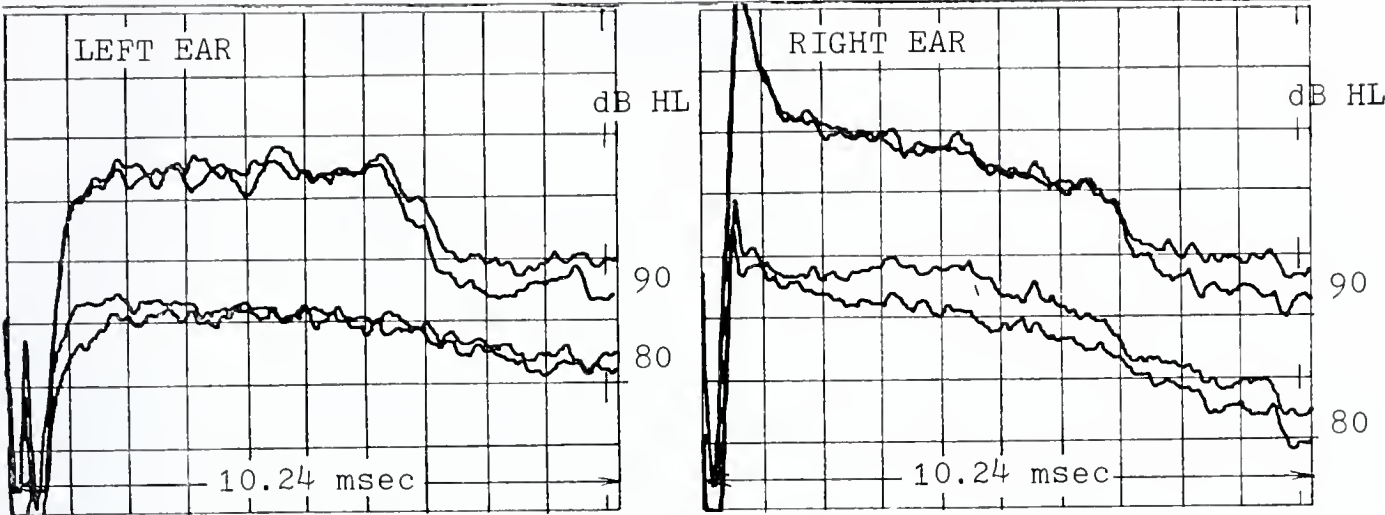


Figure 3.  
Case B. Intensity series using the brainstem AER with click stimuli to assess high frequency hearing.

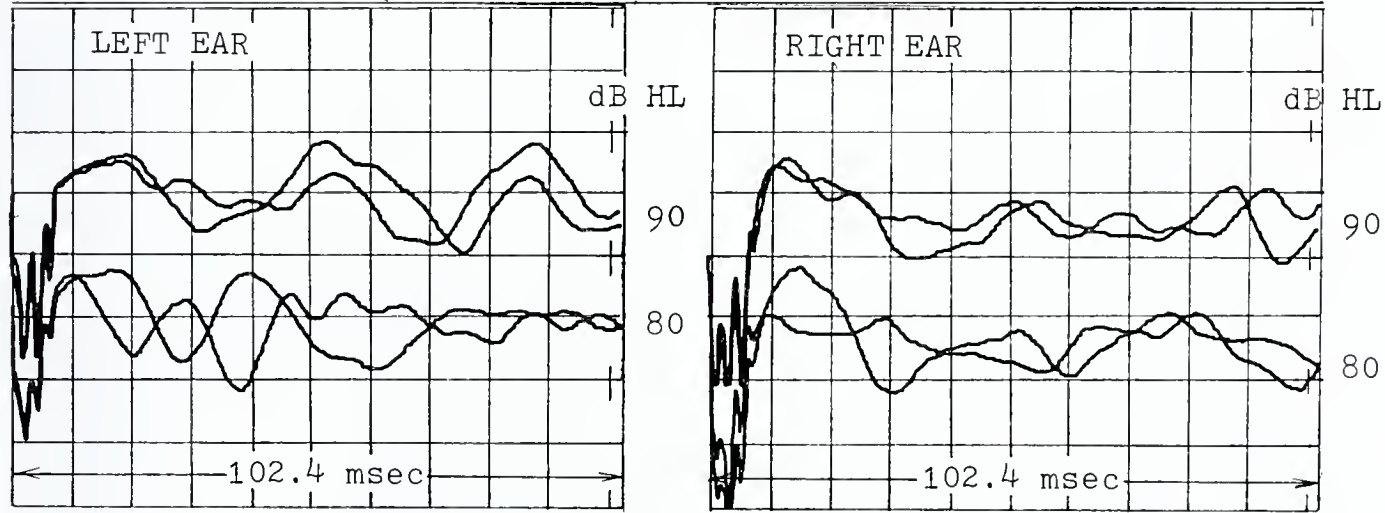


Figure 4.  
Case B. Intensity series using the middle component AER with 500 Hz tone pips to assess low frequency hearing.

acoustic tumors, hydrocephalus, aphasia, coma and other space occupying and degenerative lesions.

Case C represents a surgically-confirmed two-centimeter acoustic tumor. The audiological results were within normal limits on the left side. The right ear demonstrated a 60 dB HL sensori-neural hearing loss with a discrimination for speech score of 20%. Acoustic reflexes were present but decayed to about 50% over a period of ten seconds when the right ear was stimulated. Six of the seven brainstem peaks were identifiable when the left ear was stimulated (Figure 5). Only a very delayed (8.20 milliseconds) wave V was clearly identifiable when the right ear was stimulated. The response from the right ear represents poor synchronization of the fibers along the auditory nerve.

In summary the AER has been shown to be a useful tool for evaluating hearing in the very young and other difficult-to-test patients, and for detecting acoustic tumors as well as other neuro-

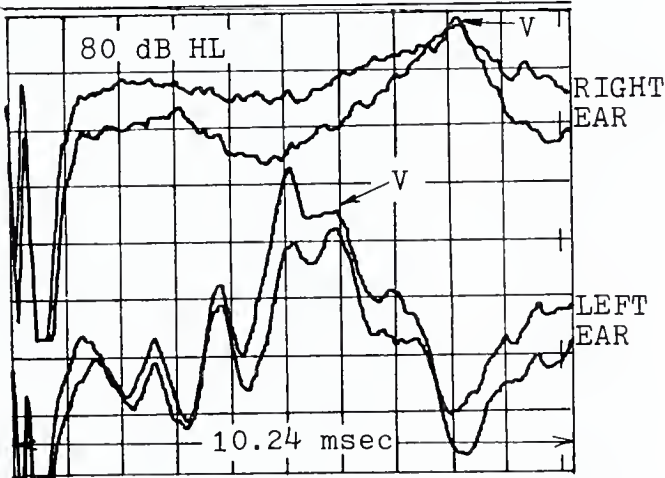


Figure 5.  
Case C. The brainstem AER of a patient with an acoustic tumor involving the right ear.

logical disorders. An audiologist with the proper background and training is able to incorporate the AER as a practical and valuable diagnostic procedure in the clinical test battery.

REFERENCE

Cunningham, G. C., (Ed.), *Conference on Newborn Hearing Screening*. Berkeley: California State Bureau of Maternal and Child Health (1971).



# Withdrawal Symptoms from Combined Alcohol And Minor Tranquilizer Intake

Robert Franken, M.D. and F. E. Seale, M.D.

The alcoholic patient who is also taking one or more of the minor tranquilizers has been seen with increasing frequency at this hospital since 1959.\* With the introduction of Valium in 1963 the problem has become one of major concern and has necessitated a new approach to diagnosis and management.

The particular vulnerability of the alcoholic to addiction to other mind-altering chemicals is well documented. What has not been reported is the existence of a well-defined syndrome of withdrawal in these cross-addicted patients, which differs materially from classical alcohol withdrawal and which requires specific recognition and special treatment.

**Materials and Methods:** In this study 100 cases were considered, using both in-patients and records from previous patients for data. Objective and subjective data were compiled by direct question and answer sessions with staff physicians

and with counselors and by continued daily observation of the patients.

Care was taken not to ask leading questions. Subjective symptoms were recorded exactly as described by the patient whenever possible. In the following chart (Figure I) the subjective symptoms described by the patients are plotted against the date of onset and duration of these symptoms. The word "dysphoria" is used to indicate a general sense of disquietude; restlessness or malaise — often expressed by the patient as a feeling of inner explosiveness. For another symptom commonly described — the feeling of wanting to run away — we have coined the term "Gauguin's Syndrome."

Figure II is a curve in which the intensity of the symptom complex is plotted against its duration. The curve is not mathematically derived from the data but is based, rather, on patient descriptions of the way they felt at the time of interview.

FIGURE I

Subjective symptoms: A - alcohol withdrawal  
T - tranquilizer withdrawal

	DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Dysphoria											T	T	T	T	T	T	T	T	T										
Weakness		A	A	A	A									T	T	T	T	T	T										
Anorexia		A	A	A	A						T	T	T	T															
Nausea		A	A									T	T	T															
Itching												T	T	T															
Gauguin's S.												T	T	T	T	T	T	T	T	T									
Tremulous		A	A	A	A	A								T	T	T	T												
Depression		A	A	A	A							T	T	T	T	T	T	T											
Paranoia												T	T	T	T														
Resentment		A	A	A	A	A																							
Vertigo		A	A																										
Panic														T	T	T	T	T	T	T									
Impending Doom														T	T	T	T	T	T	T									
Remorse		A	A	A	A	A																							
Guilt		A	A	A											T	T	T	T	T	T	T								
Hopelessness												T	T	T	T	T	T	T	T										
Helplessness		A	A	A								T	T	T	T														
Insomnia		A	A	A	A							T	T	T	T	T	T	T	T	T									
Fatigue														T	T	T	T	T											
Delusions		A	A	A											T	T	T	T	T	T	T	T							
Hallucinations		A	A																										
Agitation		A	A	A	A											T	T	T	T	T	T	T							

In Figure III objective symptoms noted by the staff are plotted against their onset and duration. "A" indicates alcohol withdrawal; "T" indicates tranquilizer withdrawal.

Figure IV is a curve derived from Figure III. It, like Figure II, is based on observation rather than mathematical projection.

Admitting the palpable margin of error in

such interpretive derivation of the data, several facts become apparent:

I. In the cross-addicted patient there are two separate and distinctive withdrawal patterns. That from alcohol follows the familiar course of alcohol stoppage. It is seen at its peak usually on the day of admission, subsides rapidly, and is over by the third or fourth day. Certain sub-

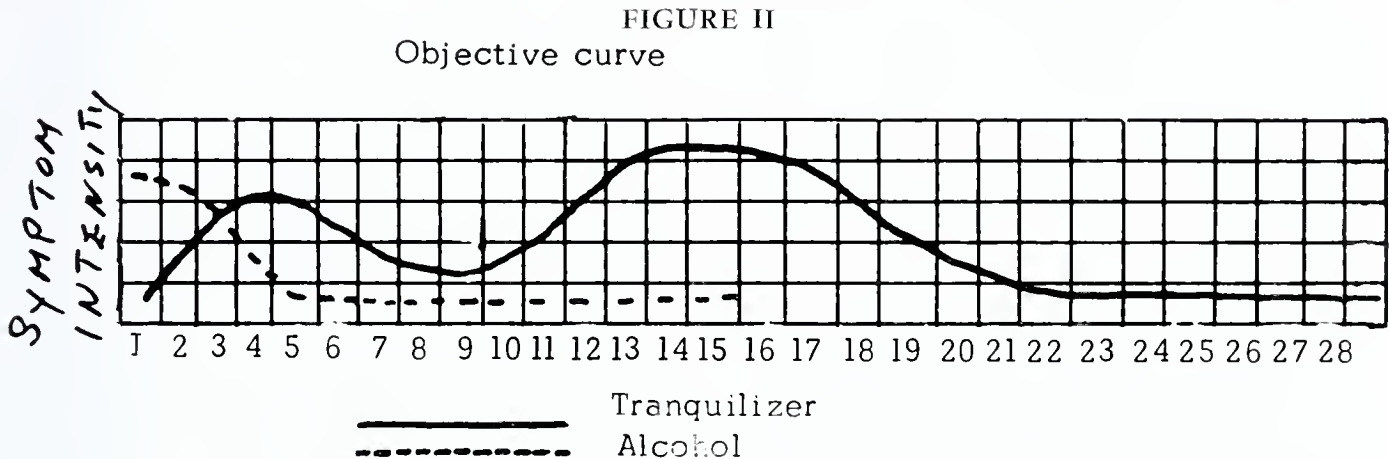
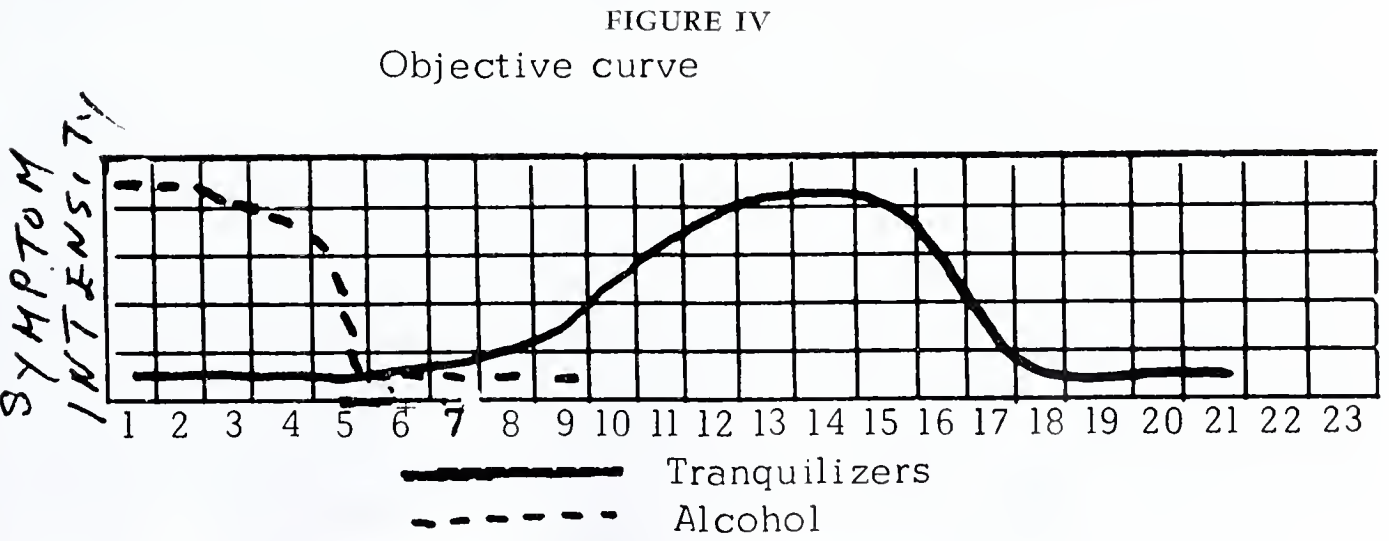


FIGURE III  
Objective symptoms of withdrawal;

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Tremor	A	A	A	A	A	A						T	T	T	T	T							
Gait difficulties	A	A	A	A	A							T	T	T	T	T							
Retching			A	A																			
Sweating				A	A	A																	
Dyslalia	A	A	A	A								T	T	T	T								
Tearing	A	A																					
Erythema	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Edema	A	A	A	A	A	A	A	A	A	A	A												
Pallor	A	A	A	A	A																		
Incoordination	A	A	A	A	A	A						T	T	T	T	T							
Hoarseness	A	A	A	A	A	A	A																
Nystagmus	A	A	A																				
Reduced blinking	A	A	A																				
Dysscriptia	A	A	A	A																			





jective symptoms, such as palmar erythema in the liver-damaged patient, of course, persist for many days but the over-all picture of the helpless drunk is soon dissipated.

2. The symptoms of withdrawal from the tranquilizers, however, do not appear until later, usually about the sixth or seventh day. In contrast to the alcohol withdrawal symptoms, these appear to escalate for several days, maintain a level for about a week and then slowly subside. It is during this period that the patient again experiences many of the early symptoms of alcohol withdrawal, with the addition of a number of new and distressing sensations and behavioral variations.

Hallucinations following withdrawal from Valium as described by *Floyd and Murphy*<sup>1</sup> were observed in 16 patients in our group. *Dyskin and Chan*<sup>2</sup> report delirium, marked confusion and disorientation as to time and place beginning on the eighth day after withdrawal from Valium. This is in substantial agreement with our findings except that, on the average, these symptoms appeared somewhat later — on the 11th and 12th day. *Dyskin, et al.*, describe two grand mal convulsions in a patient five days after abrupt discontinuance of diazepam.<sup>3</sup> In our series we have seen this only twice, possibly because we withdraw the drug gradually. In both these cases intravenous administration of Valium was effective in controlling the seizures. We have had no deaths following withdrawal but *Relkin*, as quoted by *Zisook*, reported on a 20-year-old man with basal ganglion disease who died three days after diazepam was discontinued.<sup>4</sup>

Suicidal ideation has not been commonly encountered in our patients during the withdrawal period. One female spoke incessantly of killing herself and had previously taken 100 Turinal tablets in an unsuccessful attempt to do so. As her other withdrawal symptoms subsided her talk of suicide gradually decreased and finally stopped altogether.

### Conclusions

1. Cross-addiction to alcohol and the minor tranquilizers is a rapidly increasing phenomenon.

2. There are two separate and distinct patterns in the withdrawal of the cross-addicted patient; first that from alcohol and, second, an escalating picture of mental and physical dysfunction which begins on about the sixth or seventh day, progresses rapidly for several days and lasts

much longer, subsiding slowly until about the 21st day.

3. No suggestions are made as to the management of this syndrome, if such it is. Each patient has to be individualized according to the physician's judgment and treatment will vary in every case.

Ryan, in 1968, reported on two cases of actual suicide shortly after abrupt withdrawal of diazepam. *Barry and Weintraub* in *Drug Therapy*, April 1968, describe the use of pentobarbital (Nembutal) in decreasing doses in the management of withdrawal from diazepam.<sup>6</sup> This method has not been successful in our hands. Dependence upon barbiturates occurs rapidly in the addictive personality and substitutions of one problem for another has not been an effective approach. The method in use at this hospital\* has been to give Valium in gradually decreasing doses over a period of two weeks, at which time all drug therapy is discontinued. This method has been effective in the management withdrawal from the entire spectrum of mind-altering drugs — including hard narcotics and alcohol.

It is recommended that physicians treating alcoholism and related problems have a high index of suspicion toward cross-addiction and to suggest to their patients that a second withdrawal pattern might appear approximately a week after the "hangover" from alcohol is gone. It is further noted that the most severe and dangerous of features of the withdrawal pattern occur when diazepam and related drugs are discontinued abruptly. Gradual withdrawal of the drug or drugs with substitution of decreasing dosages of Valium has been the most effective method of management in our hands. It has been our experience that complete abstinence from all mind-altering drugs and from alcohol is essential in the long-term cure of the cross-addicted patient.

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\*Starlite Village Hospital, Center Point, Texas, F. E. Seale, M.D., Medical Director.

# Pediatric Review:

## Management of the Patient With Suspect Immune Deficiency

Russell W. Steele, M.D., and Paul Martin Fiser, M.D.\*

The rapid progress in basic immunology during the previous decade has made clinicians increasingly aware of the importance for assessing competence in a wide variety of patients.

**Table 1.**  
**PATIENTS WARRANTING EVALUATION OF IMMUNE COMPETENCE**

1. Recurrent or unusual infections.
2. Family history of fetal demise or young infant death.
3. Failure to thrive or chronic diarrhea in young infants.
4. Patients with primary diseases known to suppress immune function.
5. Patients on immunosuppressive medication.

During early life, primary immune deficiency would be suspected in the infant with recurrent or unusual infections, failure to thrive, chronic diarrhea or those with a family history of young infant death. Likewise, adults with significant infectious disease and those with primary illness known to be associated with defects in immune function warrant careful examination.

This brief summary is an attempt to outline for the practicing physician methods of evaluating such patients in the office setting and to discuss a few circumstances where the University of Arkansas Medical Sciences Campus might support management of patients with suspect immune deficiency.

*Office work-up:* Most local laboratories offer basic screening studies which would suffice for evaluating the great bulk of patients whose illnesses have resulted simply from unusual exposure to infectious agents, delay or neglect on the part of the patient himself, or perhaps even psychologic overlay. A complete blood count, sedimentation rate and quantitation immunoglobulin determinations can be provided in such facilities. These tests then provide data for

assessing the quantitative presence of phagocytes (absolute neutrophil count) and for screening humoral immunity (immunoglobulins). The most time-honored method of evaluating cell-mediated immunity (CMI) has been the skin test and it is presently not apparent whether more complex in-vitro assays would actually offer an advantage over the classic skin testing approach in screening CMI. Monilia and tetanus toxoid antigens are best because prior sensitization can more readily be ascertained, particularly for tetanus. By combining the two skin tests, at least one is positive in 73% of infants over 6 weeks of age.<sup>1</sup> Moreover, these skin test preparations are readily available and require minimal expertise for application and interpretation.

**Table 2.**  
**OFFICE IMMUNOLOGIC SCREEN**

*General:*

History and Physical  
CBC with absolute neutrophil and lymphocyte counts  
Sedimentation rate

*Humoral Immunity:*

Quantitative Immunoglobulins (IgG, IgA, and IgM)

*Cellular Immunity:*

Skin tests (intradermal)  
Monilia .....1:100  
Tetanus Toxoid .....1:1

*Other:*

Chest x-rays

*Referral studies:* Once screening studies have demonstrated abnormalities or additional information is required, centers are available for further examination. Selection of tests will vary from one laboratory to another and represent bias as a result of particular experience or research endeavors of the responsible immunologists. Table 3 outlines the approach by our laboratory in assessing immune function in referred patients. Not all tests are performed but appropriate ones are selected based on the patient's history and physical exam.

\*Division of Immunology, Department of Pediatrics, and the Clinical Immunology Center, University of Arkansas for Medical Sciences, Little Rock, Arkansas.

Mailing Address: Russell W. Steele, M.D., Department of Pediatrics, University of Arkansas for Medical Sciences, 4301 West Markham, Little Rock, Arkansas 72201.



**Table 3.**  
**REFERRAL LABORATORY EXAMINATION**

*Humoral Immunity:*

Protein electrophoresis  
Specific antibody (tetanus and diphtheria)  
Isohemagglutinins  
IgE  
Total hemolytic complement ( $CH_{100}$ )

*Cellular Immunity:*

Mitogen blastogenesis — phytohemagglutinin (PHA), pokeweed mitogen (PWM), and Concanavalin A (Con A)  
Antigen blastogenesis — monilia, SKSD, varicella-zoster

*Phagocytosis:*

NBT

*Other:*

Sweat test

*Specific clinical problems:* Following are brief resumes of the more common referrals to our immunology clinic:

Children with dysgammaglobulinemia, particularly hypo IgA, are referred often for confirmation. These children cannot receive live virus vaccines as recommended by the American Academy of Pediatrics.<sup>2</sup> Children with absent IgA should also have determination of secretory IgA (SIgA). Those with absent SIgA usually require liberal use of antibiotics while those with local immunity often require no special care. Also, absent SIgA is associated with chronic sinusitis necessitating drainage or antral window surgery during the early adolescent years.

Patients successfully treated for a malignancy such as a Wilh's tumor are seen for careful evaluation of immune status prior to immunization with live vaccine.

Individuals with recurrent staphylococcal furunculosis warrant screening for chronic granulomatous disease if they are young male patients and a nitroblue tetrazolium dye reduction assay (NBT) best accomplishes this. However, recurrent disease is most commonly the result of colonization with a virulent strain of *S. aureus*. Our approach has been eradication of the strain with nasal topical antibiotics and frequent showers followed by nasal inoculation with a benign strain of *S. aureus*, i.e. 502A, to interfere with subsequent colonization by the more virulent organism. All family members should be similarly treated.

Cancer patients or anyone on immunosuppressive therapy such as nephrotics or those with autoimmune disease are seen to have immune status carefully defined to determine propensity to infectious diseases such as disseminated varicellazoster, pneumocystic carinii pneumonia, or bacterial sepsis. Anticipation of infectious processes may be lifesaving for those who are severely immune compromised.

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## Megalodactylism — Macroductylism — Local Giantism of Digits

Kenneth G. Jones, M.D.\*

Overgrowth of one or more digits of a hand or foot constitutes an infrequently encountered seemingly non-familial congenital deformity which is often apparent at birth. Involvement of two extremities in the same individual is not usual. Associated congenital anomalies are seldom manifest. Although some authors have regarded local giantism as a "forme-fruste" of Von Ricklinghausen's neurofibromatosis, the two processes are more dissimilar than they are similar, both clinically and histologically. The latter disease process is a metaplastic or neoplastic one affecting the neural structures, while in megalodactyly (local giantism), the process is more that of a hamartoma. The lesion is one of "superfluous tissues" rather than "neoplastic tissue." All the tissues of the affected digit are enlarged; nerve, connecting bone, fat, cartilage and skin. It is presumptive to conclude that the neural elements are causative as all of the tissues are similarly involved. The relationship between these abnormal tissues may in actuality be casual rather than causal.

Even though overgrowth of portions of extremities is on occasions seen in some cases of Von Ricklinghausen's neurofibromatosis, when one considers the total process, the dissimilarities between that disease and local giantism are marked. Too, it is clinically prudent to regard the two as separate abnormal conditions. Recognition of the two processes as distinct entities is desirable so that the diagnosis of megalodactylism is made at a young age. When instituted early,

local giantism is amenable to judicious management. Management of macroductyly when instituted before the abnormal growth has exceeded usual adult proportions can significantly lessen the extent of the deformity. Treatment of generalized neurofibromatosis is usually limited to resection of excessively large or unsightly tumors or those which have become malignant.

If the infant or child affected with macroductyly is seen before the abnormal phalanges — and, in some instances, the abnormal metacarpals — have elongated beyond the same bones of the parent of the same sex, linear growth can be arrested by staged epiphyseal plate resections to preclude an abnormal length of the adult digit. (Jones). Radiographic comparison of the appropriate bones of the *same* hand or the *same* foot of the parent of the *same* sex can be used as a reliable guide for timing epiphyseal resection. After surgically arresting the affected bones when they are the same length as those of the parent, the unaffected bones of the abnormal extremity will continue to grow and will by the time of normal epiphyseal closure have restored the hand or foot to normal or nearly normal proportions. Though circumferential enlargement of the bones and the digit cannot be managed so efficiently, these patients are able to more readily accept their abnormality since it is the excessive length which creates the grotesque. Also, it may be anticipated that epiphyseal arrest, if properly executed, will leave the joints of the digit without surgically diminished sensation. Thereby, the most satisfactory function of the digit is as-

\*Little Rock Orthopedic Clinic, P.A., 9500 Lile Drive, P.O. Box 5270, Little Rock, Arkansas 72215.



sured. In addition, if indicated, some circumferential reduction can be accomplished by defatting. If needed, bone resection will further reduce the size of the digit.

Tsuge and others have advocated resection of all or most of the branches of the digital nerves at an early age, believing that the obviously enlarged nerves, in some unexplained manner, cause or influence the abnormal enlargement of all of the tissues of the involved parts. However, two disadvantages in this approach are apparent. First, the hypothesis of a causative interrelationship between the large nerves and the other enlarged tissues remains unproven. Second, the digit is permanently impaired as a consequence of destruction of nerve branches. For these reasons, that approach to management, while acceptable to some surgeons is unacceptable to other surgeons. It is, however, another method of management.

If the patient is not so fortunate as to be placed on a management program at an early age, treatment as an adult, although less rewarding, is still available. In years past, adult management has usually consisted of amputation of the part—a less than satisfactory approach. When it is a foot which is involved, removal of excess tissue by resection or ablation with nar-

rowing of the foot so that the patient is then able to wear matched shoes is often all that is necessary.

Mouly and Debeyre, Barsky, and Tsuge have described ingenious methods for shortening of excessively long adult digits. Even though the appearance and the function of hands have been improved thereby, this imposed belated approach must be viewed as a salvage procedure and not that of choice. Management, when instituted early, should alleviate the need for procedures of this nature.

All of which is to say; early suspicion, early recognition, and early treatment are the sine qua non for a satisfactory outcome of management of this challenging, though incompletely understood, problem.

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# ELECTROCARDIOGRAM

# OF THE MONTH



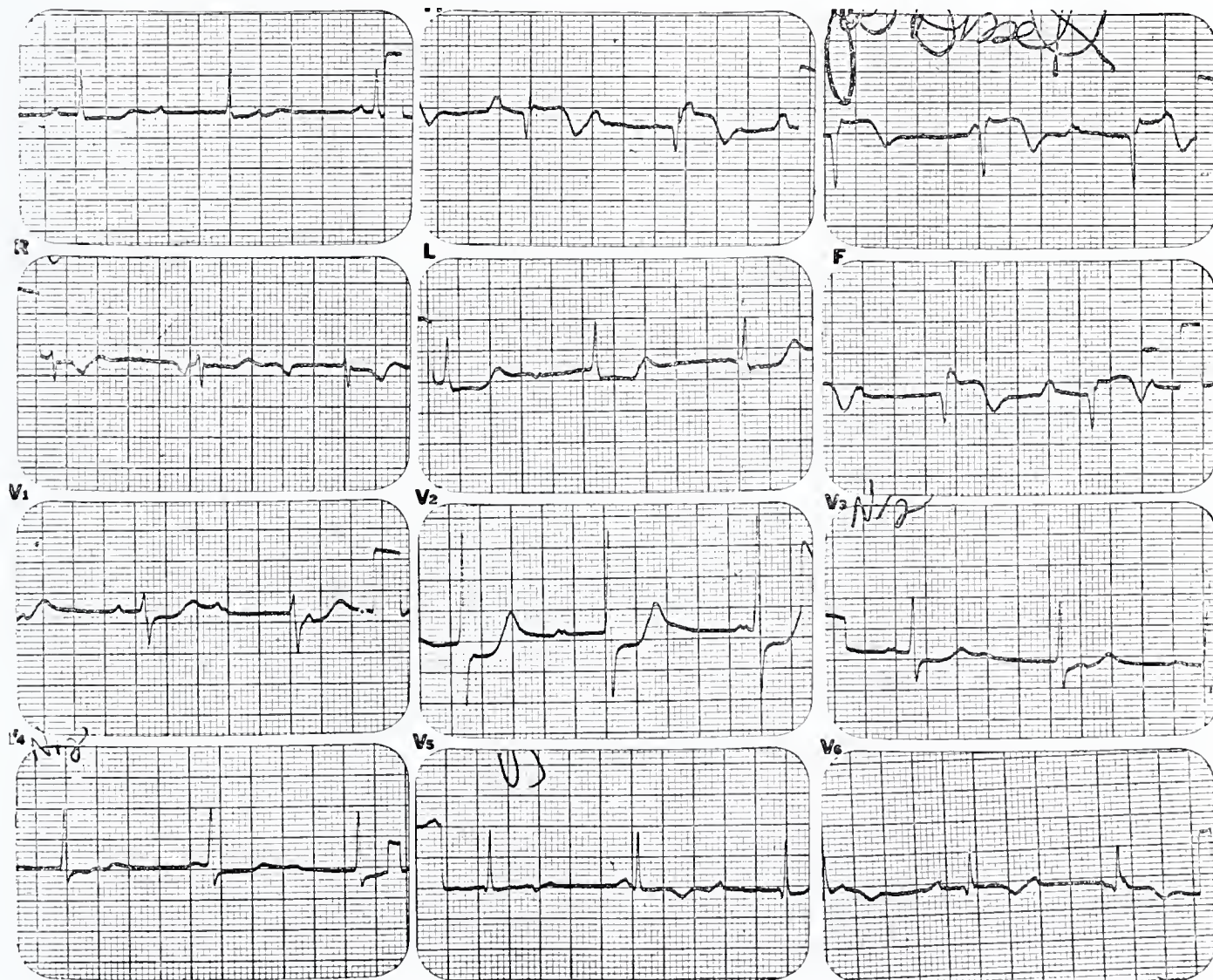
The Department of Cardiology, University of Arkansas College of Medicine

(See Answer on Page 243)

**HISTORY:** Mr. B is a 77-year-old man who presented to the Emergency Room because of a prolonged episode of crushing substernal chest pain associated with diaphoresis and nausea. His physical examination revealed normal mentation, a blood pressure of 110/70 mm Hg, warm skin and extremities, clear lungs, and an S3 gallop. The electrocardiogram on admission is shown.

Which one of the following modalities of therapy do you feel would be most proper?

1. Immediate placement of a temporary transvenous pacemaker.
2. Immediate placement of a pulmonary artery catheter with subsequent administration of sodium nitroprusside.
3. Clinical observation in the CCU setting with Atropine close at hand.
4. Standard therapy for pericarditis.



John W. Watson, M.D.  
 Assistant Professor  
 Division of Cardiology  
 University of Arkansas for Medical Sciences  
 4301 West Markham  
 Little Rock, Arkansas 72201





## Short-Course Chemotherapy for Tuberculosis

William W. Stead, M.D.\* and Asim K. Dutt, M.D.\*\*

The treatment of tuberculosis has come a long way in the general hospital program and ambulatory care from the sanatorium system in use as late as 1973. However, since January of 1976, a short-course regimen of anti-tuberculosis chemotherapy using rifampin (RIF) and isoniazid (INH) has been used by the Tuberculosis Program of the Arkansas Department of Health. In January of this year (1979), the short-course regimen was adopted as the standard form of therapy for tuberculosis (TB) in Arkansas. It is the first and only state in the U.S.A. to accept this mode of therapy.

Evidence indicates that with these two bactericidal drugs the treatment period for active TB can safely be reduced from a range of 18 to 24 months to nine months. This is a revolutionary development in the treatment of TB.

Two key experimental studies of tuberculosis in mice demonstrated the effective bactericidal activity of isoniazid and pyrazinamide (PZA)<sup>1</sup> and of rifampin (RIF)<sup>2</sup> which led to the development of short-course chemotherapy for TB. The efficacy of rifampin both alone and in combination with isoniazid (INH) has been confirmed by several workers in experimental murine tuberculosis.<sup>3</sup> This experimental knowledge was applied in the treatment of human disease under controlled clinical trials.

Although this form of therapy was pioneered by others,<sup>4,5</sup> the Arkansas program has demonstrated its practical use as a regimen by modifying various other regimens used in controlled studies of short-course chemotherapy for TB. Unlike "standard" regimens currently in use, it involves acceptable cost, duration and toxic effects. The state Health Department now has

experience with about 675 adult patients with pulmonary tuberculosis, with therapy consisting of the daily administration of INH and RIF for 30 days, followed by twice-weekly administration of these drugs for another eight months.

A full course of treatment uses less than 100 doses of RIF, making the cost of medication approximately \$86 in comparison to about \$310 for an INH and EMB therapy program which lasts 18 months with three months of SM initially; or \$454 for INH and RIF given daily for 18 months.

Prior to the introduction of INH and RIF in a short-term chemotherapy program, the daily treatment of TB necessitated 545 to 730 doses of medicine over 18 to 24 months. This contrasts dramatically with less than 100 doses over a nine-month period.

Originally, only newly diagnosed cases of pulmonary tuberculosis were eligible for treatment under the protocol of short-course chemotherapy if: (1) the sputum smear was positive for acid-fast bacilli and the chest roentgenogram was compatible with active tuberculosis; (2) the sputum culture was positive (despite negative initial smears) before any therapy has been initiated; (3) there was no history of prior chemotherapy or likelihood of bacterial resistance (e.g., patients from the Philippines, S.E. Asia, etc.); and (4) no other chemotherapy had been given for more than ten days.

The treatment schedule of the "Arkansas regimen" was: RIF 600 mg and INH 300 MG (about 5 mg/kg) given daily for one month, followed by INH 900 mg (about 15 mg/kg) and RIF 600 mg twice a week for another eight months. Medications were given in a single dose, preferably before breakfast to facilitate rapid absorption.

Bacteriologic monitoring was by smear and culture of sputum; weekly, at first, until three

\*Director, Tuberculosis Program, Arkansas Department of Health, 4815 West Markham, Little Rock, Arkansas 72201.

\*\*Consultant to the Tuberculosis Program, Arkansas Department of Health; Physician, Veterans Administration Hospital.

consecutive specimens had been reported negative by culture. Then, monthly sputum samples were submitted until six months after completion of therapy. Sputum was then checked every three months for another 21 months, giving a total of 36 months of observation.

The baseline studies consisted of blood counts, urine analysis, and both renal and liver function tests. These were obtained at the start of therapy and repeat studies were ordered thereafter only as indicated by clinical signs or symptoms suggestive of drug toxicity.

Surveillance for compliance and toxicity was done as each patient was seen weekly by a public health nurse for two months to check urine for presence of INH and the red color of RIF. Appropriate questions were asked for symptoms of side effects of the drugs at each visit. If all was well after two months of therapy (one month of daily and one of twice-weekly administration), further observations were made at least monthly during the entire course of therapy.<sup>6</sup>

With few exceptions, patients took the drugs without supervision. Ingestion of the drugs by senile and unreliable patients was supervised by a member of the health team. The bacteriologic conversion of sputum from positive to negative (as tested by smear and culture) occurred in over 95 percent of 500 bacteriologically positive patients (mean age 57 years) completing three months of therapy. Of these 500 patients, eight percent discontinued therapy during the daily phase due to drug-related side effects in 31 and death from overwhelming tuberculosis in eight.

Overall side effects occurring in six percent of the patients during the daily phase were not serious and primarily consisted of minor allergic reactions and gastrointestinal intolerance. The only serious side effects to the drugs administered were 12 cases of jaundice, which occurred during the first six weeks of therapy. In seven instances of jaundice RIF was believed to be responsible and INH was the suspected cause in three others. These cases cleared without incident. Two who developed jaundice were near death from multiple causes when therapy began and they died on the eighth day of treatment.

Medication was terminated in 10 percent of the patients for a variety of reasons ranging from bacteriologic failure in seven patients (two percent), drug toxicity in 20 (four percent), de-

parture from the state during the course of treatment in three percent and non-tuberculous deaths in one percent among the remaining 461 patients during the twice-weekly phase of treatment.

During the twice-weekly phase of therapy, clinical surveillance for toxicity was particularly close. Overall side effects of the drugs occurred in four percent of the patients receiving twice-weekly therapy, but the major side effects occurred in three percent consisting of petichiae with or without thrombocytopenia in four patients and a "flu-like" syndrome in six patients. The remaining were allergic or intolerant to the drugs or medication. Of the 461 patients who progressed into the twice-weekly phase, about 330 have now finished the complete course of treatment while about 83 are still receiving therapy.

Of the 320 patients who had completed therapy at the time of this report, there were seven patients (two percent) who were considered bacteriologic failures. These seven patients underwent therapy for four to nine months and continued to produce positive cultures. Two who developed resistant bacteria were thought to be non-compliant in their treatment. One other patient who had resistant bacteria was accidentally not tested before therapy and was thought to have had resistant bacteria initially. Two patients developed resistant bacteria with no explanation; and two others continued to produce positive cultures five months after therapy with susceptible organisms. Eight patients died of tuberculosis during the first month of therapy. Thus, treatment failed in 15 (four percent) of 335 patients.

The 320 patients with completed therapy are being followed for one to 36 months. Only three relapses (less than one percent) occurred during the third, fourth, and sixth month after completion of treatment, with susceptible bacilli.

The Arkansas Department of Health's tuberculosis treatment regimen has proved very effective in the long-term as well as the short. The state of Arkansas usually averages 30 to 40 relapse cases annually, some with resistant organisms. So far this year, there have been only three and none had been treated with the new regimen of INH and RIF. The total number of resistant cases in Arkansas used to be about 50



and is now only one. These two facts show the effectiveness of the new regimen in the long term.

Side effects to the drugs are low, which can be managed easily with some observation of the patients, and has not proved fatal. The use of RIF in a lower dose of 600 mg has a low incidence of side effects when given twice-weekly than the use of 900 to 1200 mg doses.<sup>7</sup> The relapses are infrequent and usually occur in the first year after stopping the chemotherapy. Thus, a long period of follow-up is not necessary in these patients.

The results of nearly four years of experience with this short-course regimen has shown it to be safe and extremely effective in the treatment of pulmonary tuberculosis. Hopefully, these results will encourage physicians in other states to follow Arkansas' lead and begin to use short-course regimens of anti-tuberculosis chemotherapy.

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## EDITORIAL

# Endorphins

Alfred Kahn, Jr., M.D.

The understanding of pain and the symptomatic relief of pain has been one of the most basic aims of physicians. Through the centuries, some very interesting new studies have been made on pain and reported as a National Institute of Health Conference entitled "Basic and Clinical Studies of Endorphins" (*Annals of Internal Medicine*, Volume 91, Page 239, August 1979).

Dr. W. E. Bunney, Jr., who moderated the symposium, states that this new era of neuroscience was really precipitated by the discovery

of that certain opiate agonist and antagonist could be made radio-active and tracked to their binding sites in the brain. A second advance was the discovery that the body made pain relieving substances which acted like opiates — they were named enkephalin. It was soon found that enkephalins were part of a molecule called B-lipoprotein.

Dr. C. B. Pert, a participant in the symposium, discussed opiate receptors. She states that opiate-like substances have to have an appropriate spatial configuration to fit the receptor. Further-

more, the opiate-like substance can be measured *in vitro* by binding — and this in turn correlated to the clinical effectiveness. It is interesting that Pert states that the opiates tend to bounce on and off the receptor — the longer the attachment the weaker the concentration needed for a clinical effect. Because primitive animals have opiate receptors, a search was made for natural opiate receptors — and the enkephalins were found. Apparently when a receptor attaches to enkephalin, sodium does not enter the neuron, thus blocking the excitatory cell activity. The opiate receptors and enkephalins are geographically closely located in the brain. The opiate receptors are found in higher concentrations in some areas of the brain — and this has led to speculation that the enkephalins may have functions other than alleviation of pain.

Dr. Werner A. Klee reported on possible cellular mechanisms for addiction using cell homogenates. It is postulated that cyclic adenosine mono phosphate acts as a pivotal point in intercellular metabolism. cAMP acts through kinases. Substances which affect cAMP will thus modulate intercellular activity. Using homogenates, it has been shown that stimulation of opiate receptors decreases cAMP — whether from enkephalins opiates, etc., cells cultured with opiates and soon become tolerant — and the cAMP level is not decreased by the opiate. Of further interest, the cell culture can get drug dependence: apparently, withdrawal of the opiate allows the cAMP to operate at a high level of activity. Dr. Klee states that there is a dual regulation of adenylate cyclase which can represent the acute and chronic effects of opiate ingestion. The dual regulation applies to other receptors, not to just opiate type receptors.

The involvement of endorphins in the action of antipsychotic drugs was presented by Dr. Erminio Costa. He states that antipsychotic drugs increase enkephalin concentration of some brain nuclei — particularly those acted upon by numerous dopamine type neurons. This may cause the clinical benefit reported from the use of anti-psychotic drugs.

Dr. Agu Pert reviewed endorphins in pain modulation. It is stated that there are three modes of function of analgesics: inhibition of primary somatosensory afferents in the dorsal horn, inhibition of primary somatosensory im-

pulses at supraspinal level, and through the activation of descending inhibitory pathways. Pert reports that the areas are circumscribed anatomically. It is proposed that opiate-like substances somehow block the pain messages in or near the areas which receive and act as terminals for pain impulses. Where there seem to be centers to interpret or receive pain, there are many opiate receptors and Pert believes this may be related to modulation pain sensation. In all events, the work done so far indicates that opiates have both a spinal and supraspinal effect. The question has been raised as to whether the alleviation of pain is an inhibitory function or an active stimulation.

Dr. G. C. Davis reviewed the role of endorphins in normal and psychiatric patients. Dr. Davis feels that endorphin changes could be a factor in psychiatric disorders and states that morphine has been used as an antipsychotic drug in the past; he cites naloxone as reducing auditory hallucinations in schizophrenia. B-endorphin seems to be beneficial in depressive states; the results in manic states are inconclusive. Endorphin relation to sleep is unclear. Endorphins do seem to increase the release of growth hormone and prolactin; it decreases F.S.H. and L.H.

These studies suggest that endorphins may modulate or transmit a number of messages pertaining to matters other than pain sensation.



#### **ANSWER—Electrocardiogram of the Month**

**DISCUSSION:** The electrocardiogram shows AV dissociation with an atrial rate of 88/minute and a ventricular rate of 62/minute. Also, changes of acute inferior infarction are present with Q-waves and ST elevation in Leads II, III, and AVF with associated ST segment depression in I, AVL, and V1-V3. Patients with inferior infarcts even with AV dissociation have a favorable prognosis. Many such patients will not require a pacemaker, but some will, usually on a temporary basis. There is no clinical or electrocardiographic evidence of pericarditis and the usual reasons for PA catheterization are not present in this case. Thus either 3 or 1 would be favored on the basis of the information presented.



## MEDICINE IN THE



### THE MONTH IN WASHINGTON

With the Congress adjourned for the month of August, little hard news of medical or health care import developed in the nation's capital, despite some zesty activity in other quarters.

But much of importance to hospitals and medicine did take place during August — back home in the Congressional districts. What the folks back home told their members with respect to the Administration's hospital cost containment legislation will be clearly visible in the Congress shortly after it returns in September.

The fate of the storm-tossed hospital cost containment bill is due to be settled in September when both House and Senate move toward showdown floor votes.

The outcome in both cases is expected to be close. A defeat in either Chamber probably would kill the measure.

The stakes are high for President Carter and for the hospitals and other health care providers who have clashed with the Administration for two years over the plan to impose standby federal ceilings on hospital revenues.

Carter claims the measure is needed to curb inflation in health care costs and to pave the way for a national health insurance program. The providers contend that singling out one sector of the economy for controls is unfair and unworkable. Ceilings would result finally in rationing of care, they say.

The sharp division in Congress on the issue is reflected in its legislative history this year. The Senate Human Resources Committee approved

the plan, but the Senate Finance Committee rejected it. The House Ways and Means Committee has not been able thus far to bring it up for a vote due to the strength of opponents.

Nevertheless, Congressional leadership has decided that the matter must be settled by floor votes.

In a Legislative Alert dispatched to constituent state societies, the American Medical Association said the Administration's "cap" proposal would:

- (a) Impose substantial new regulatory burdens on an already overregulated industry;
- (b) Impose an arbitrary and unrealistic ceiling on hospital revenues which could lead to rationing of health care pursuant to federal dictates; and
- (c) Cause a deterioration in quality of care, as it makes no allowance for the use of new technology.

The Alert said the Administration's proposal "would directly undermine the Voluntary Effort's cost containment program."

The bill "penalizes efficient hospitals; and once under control, the hospital remains controlled for the life of the program," the AMA said.

"Instead of dealing with the underlying causes of inflation (currently running at more than 13 percent annually), the Administration is using hospitals as a scapegoat to divert attention from its failing monetary and economic policies generally," the Alert declared.



# keeping up

## Category 1 Continuing Medical Education Programs Available in Arkansas

### **AMERICAN HEART ASSOCIATION ADVANCED CARDIAC LIFE SUPPORT PROVIDER'S COURSE**

Presented by Jon Krannichfeld, M.D., 8:00 A.M. to 5:00 P.M., December 1-2, 1979, University of Arkansas for Medical Sciences, Education II Building, Little Rock. 13½ hours Category I credit. Registration fee \$50.

### **SYMPOSIUM ON NUCLEAR CARDIOLOGY**

9:00 A.M., December 1, 1979, St. Vincent Infirmary, Education Wing, Room E155. Six hours Category I credit and six hours AAFP prescribed credit. Guest faculty includes Ralph J. Gorten, M.D., Director of the Division of Nuclear Medicine, Department of Radiology, University of Texas Medical Branch at Galveston, and Donald H. Schmidt, M.D., Head, Cardiovascular Disease Section, Mount Sinai Medical Center, and Professor of Medicine, University of Wisconsin School of Medicine, Milwaukee.

### **THE ROLE OF COPPER IN ARTHRITIS (RECENT DEVELOPMENTS IN RESEARCH OF THE ARTHRITIC DISEASES)**

Presented by John R. J. Sorenson, Ph.D., College of Pharmacy, University of Arkansas for

Medical Sciences, 8:00 A.M. to 5:00 P.M. daily, December 3-6, 1979, University of Arkansas for Medical Sciences, Education Building G-141. Twenty-four hours Category I credit. Registration \$190 including meals, \$100 without meals.

### **PEDIATRIC TOPICS**

Presented by Dr. Paul Bowman, St. Jude Children's Research Hospital, Memphis, Tennessee; Dr. Paul Nestrud, University of Arkansas for Medical Sciences; and local faculty. 8:30 A.M. to 4:15 P.M., December 15, 1979, Fianna Hills Country Club, Fort Smith, Arkansas. Sponsored by AHEC-Fort Smith. Six hours Category I credit and six hours AAFP prescribed credit. Registration fee \$25.

### **CARDIOVASCULAR DISEASE**

Presented by Dr. Ron Anderson, University of Texas Southwest, and local faculty, 8:30 A.M. to 4:15 P.M., January 26, 1980, Fianna Hills Country Club, Fort Smith, Arkansas. Sponsored by AHEC-Fort Smith. Six hours Category I credit and six hours AAFP prescribed credit. Registration fee \$25.

### **RECURRING EDUCATION PROGRAMS**

Unless otherwise indicated, programs are for one to one and one-half hours Category I credit.

#### **FAYETTEVILLE — WASHINGTON REGIONAL MEDICAL CENTER**

*Medical Teaching Conference*, every Saturday, 7:30 A.M. Sponsored by Area Health Education Center-Northwest.

#### **FAYETTEVILLE — VA MEDICAL CENTER**

*Radiology Conference*, first and third Thursday, 1:00 P.M.

*Pathology Conference*, second Tuesday, 1:30 P.M.

*Mortality Conference*, second Thursday, 3:00 P.M.

#### **HOT SPRINGS**

*Arkansas State Health Department Regional Chest Conference*, second and fourth Tuesday, St. Joseph's Mercy Medical Center.

#### **JONESBORO — ST. BERNARD'S REGIONAL MEDICAL CENTER**

*Medical Lecture Series*, first, second, and fourth Friday, 11:50 A.M. Sponsored by AHEC-N.E.

*Interesting Cases*, second and fourth Tuesday, 11:50 A.M. Sponsored by AHEC-N.E.

*Tumor Conference*, third Tuesday, 11:50 A.M. Sponsored by AHEC-N.E.

*Chest Conference*, third Friday, 11:50 A.M. Sponsored by AHEC-N.E.

#### **LITTLE ROCK — BAPTIST MEDICAL CENTER**

*Pulmonary Care Conference*, each Tuesday, 12:00 noon to 1:00 P.M., Dining Room #4.

*Central Arkansas Primary Care Conference*, second Tuesday, 7:00 P.M. to 9:00 P.M., Auditorium. Two hours Category I credit. A meal is provided.

*Cardiopulmonary Resuscitation Course*, second Wednesday, 6:00 P.M. to 12:00 P.M. Human Resource Development area.

As organizations accredited for continuing medical education by the Liaison Committee on Continuing Medical Education, the organizations named certify that these continuing medical education activities meet the criteria for the credit hours specified in Category I of the Physician's Recognition Award of the American Medical Association.



Six hours Category 1 credit. A meal is provided.

*Morbidity and Mortality Conference*, first Thursday, 8:00 A.M. to 9:00 A.M. Conference Room #1.

*Surgery Conference*, each Thursday except first Thursday, 8:00 A.M. to 9:00 A.M. Conference Room #1.

#### **LITTLE ROCK — ST. VINCENT INFIRMARY**

*Interhospital GI Problems Conference*, first Monday, 6:00 P.M., Room E155 Education Wing.

*Peripheral Vascular Disease Conference*, second Monday, 6:00 P.M., Room E155 Education Wing.

*Interhospital Urology Grand Rounds*, first Tuesday, 5:30 P.M., Room E159 Education Wing.

*Neuropathology Conference*, third Tuesday, 5:00 P.M., Room S1169, Laboratory.

*Pulmonary Conference*, first and third Thursday, 12:00 noon, Room E159 Education Wing.

*Cleft Palate Conference*, February 20, 1980, Room E159 Education Wing.

#### **LITTLE ROCK — UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES**

*Internal Medicine Grand Rounds*, each Thursday, 8:00 A.M. to 9:00 A.M., Education 1 Auditorium.

#### **POCAHONTAS**

*Monthly Lecture Series*, January 15, 1980, 7:30 P.M. Sponsored by AHEC-N.E.

#### **WALNUT RIDGE**

*Monthly Lecture Series*, December 18, 1979, 7:30 P.M. Sponsored by AHEC-N.E.



## **P E R S O N A L   A N D   N E W S   I T E M S**

### **Physician Locates**

Dr. Jayaram Prasad has joined the staff at the Forrest View Medical Center specializing in Pediatrics. He served with the Air Force at Little Rock and worked in pediatrics at the LeBohner Children's Hospital in Memphis, before joining the medical center.

### **Dr. Harris Announces Associate**

Dr. Willie Harris has announced the association of Dr. Tommy Braswell specializing in Family Practice. Their offices are located at the England Clinic and Hospital in England.

### **Dr. Hawkins Presents Cancer Program**

Dr. Michael Hawkins of Mountain Home presented a "Cancer Update" at a dinner given by the First United Methodist Church. Dr. Hawkins is a member of the American College of Surgeons and the American Cancer Society.

### **Dr. Borland Locates**

Dr. Judy Borland has begun family practice at the Southeast Arkansas Medical Center, and will be associated with Dr. Les Sessions. She is a native of Paris, Arkansas, and received her training from the University of Arkansas School of Medicine.

### **Physicians Located**

Dr. Pierre Boissinot and Dr. Guy Ulrich have

joined the staff at the North Logan Memorial Hospital specializing in general practice. Both physicians came to Arkansas from Canada.

### **Physicians Named To State Hospital**

Dr. James Lloyd Thomas and Dr. Robert E. Drom were named directors of the new Childhood and Adolescent Services program by the State Mental Health Services Division. Both physicians are practicing psychiatrists.

Dr. Thomas replaces Dr. George W. Jackson as Mental Health Services Commissioner.

### **Physician Locates**

Dr. Robert Miya of Southern Ontario, Canada, has opened general practice in Brinkley.

### **Physician Honored on Retirement**

Dr. George W. Jackson has retired after twenty-three years with the State Hospital. Dr. Jackson was presented with a plaque from the hospital staff and a 25-year pin by the personnel director of the hospital board.

### **Dr. Allison Locates**

Dr. David B. Allison has opened an office in the Freeland Professional Building in Star City, specializing in family practice. Dr. Allison was formerly in practice in Crossett.

THINGS



TO

COME

#### DECEMBER 1979

A Family Practice Update sponsored by the University of Mississippi Medical Center will be held in Jackson, Mississippi, December 6-8, 1979. This course will focus on clinical manifestations of diseases with emphasis on recognition and management and will qualify physicians for 20.5 contact hours (2.05 CEU), AAFP, and Category I, AMA.

For more information contact: The Division of Continuing Health Professional Education, Uni-

versity of Mississippi Medical Center, 2500 North State Street, Jackson, Mississippi 39216 or phone (601) 987-4914.

#### APRIL 1980

The American Cancer Society National Conference for Cancer Prevention and Detection will be held April 17-19, 1980, in Chicago, Illinois. This course will qualify physicians for 14½ prescribed hours Credit, AAFP, and Category I, AMA.

For further information write: Nicholas G. Bottiglieri, M.D., American Cancer Society, National Conference, Cancer Prevention and Detection, 777 Third Avenue, New York, New York 10017.

The Annual Session of the Arkansas Medical Society will be held April 20-23, 1980, at the Arlington Hotel in Hot Springs. The Program theme will be "Recent Advances in Oncology".



## NEW MEMBERS

Crittenden County has announced the addition of two new members to their medical society:

#### Dr. Joseph P. Klutz

Dr. Klutz was born in Pennsylvania. He was graduated from Pennsylvania State University with a B.S. degree in 1972, and received his M.D. degree from the University of Pittsburgh School of Medicine in 1976. Dr. Klutz interned at the Shadyside Hospital in Pittsburgh and his residency was in family practice at the same institution. Dr. Klutz is a member of the American Academy of Family Practice.

Dr. Klutz specializes in Family Practice located at 228 Tyler, Suite 202, in West Memphis.

#### Dr. Wesley W. Murfin

Dr. Murfin was born in Battle Creek, Michigan, and received his B.A. degree in 1968 at Washing-

ton and Lee University. His M.D. degree was received at Washington University School of Medicine in St. Louis in 1974. Dr. Murfin interned at the Jewish Hospital in St. Louis, Missouri, and was in residency training at the Jewish Hospital and the Cambridge Hospital in Cambridge, Massachusetts.

Dr. Murfin is located at 228 Tyler, Suite 200, in West Memphis, specializing in Internal Medicine.

The Pulaski County Medical Society has added four active members to its roll:

#### Dr. Jack R. Allison

Dr. Allison was born in Long Beach, California. He attended the University of Tennessee and Memphis State University, and received a B.S. degree in 1972. Dr. Allison then attended the University of Tennessee College of Medicine, receiving his M.D. degree in 1975. He completed his residency in Radiology at the University of Arkansas College of Medicine.

Dr. Allison is an instructor in the Department of Radiology at the University of Arkansas College of Medicine.

#### Dr. F. Richard Jordan

Dr. Jordan is a native of Little Rock. He received his B.A. degree in 1968 from Hendrix



## NEW MEMBERS

College in Conway, and received his M.D. degree in 1972 from the University of Arkansas School of Medicine in Little Rock. Dr. Jordan received his internship training from the University Hospital in Little Rock. He received his residency training in Neurology and Neurosurgery from the University Hospital in Little Rock, and a fellowship at Presbyterian-University Hospital in Pittsburgh, Pennsylvania, in Microneuro Surgery.

Dr. Jordan is an Assistant Professor in Neurosurgery at the University of Arkansas College of Medicine.

### **Dr. R. Earl Peeples**

Dr. Peeples was born in Boston, Massachusetts. He attended the University of Oklahoma and was graduated from the University of Oklahoma College of Medicine in Oklahoma City in 1974. Dr. Peeples interned at Baptist Memorial Hospital in Memphis, Tennessee; his residency training was at the University of Oklahoma Health Sciences Center. He also had a Hand Surgery Fellowship at the University of Colorado Medical Center.

Dr. Peeples is associated with Drs. Shuffield, Hutson and Runyan at the Doctors Park Building, Room 110, in Little Rock, specializing in Orthopedics.

### **Dr. Horace Robinson Trumbull**

Dr. Trumbull is a native of Cleveland, Ohio. Dr. Trumbull attended the University of the South in Sewanee, Tennessee, and Florida State University in Tallahassee, Florida. He was graduated in 1969 from the University of Miami School of Medicine and interned at the University of Minnesota Hospital in Minneapolis, Minnesota. Dr. Trumbull received his residency training at the University of Minnesota in Minneapolis, from 1970 to 1975 in Surgery and from 1975 to 1977 in Cardiovascular and Thoracic Surgery.

Dr. Trumbull is an assistant professor of Surgery at the University of Arkansas College of Medicine. He was certified by the American Board of Surgery in 1977 and the American Board of Thoracic Surgery in 1978.

The Pulaski County Medical Society has also added one new courtesy member to its roll:

### **Dr. Deborah A. Smith**

Dr. Smith is a native of Marshall, Arkansas. She received a B.S. degree from the University of Central Arkansas and is a resident in Pathology with the University of Arkansas Medical Sciences.

### **Dr. Robert D. Taylor**

Dr. Taylor is a new member of the Craighead-Poinsett County Medical Society. He was born in Batesville and received a B.A. degree in 1972 from the Arkansas College in Batesville. Dr. Taylor received his M.D. degree in 1976 from the University of Arkansas School of Medicine in Little Rock. He interned at the University of Arkansas Medical Center and remained at the same institution for residency training.

Dr. Taylor practices internal medicine at 311 East Matthews in Jonesboro.

### **Dr. Stanley L. Reyenga**

Dr. Reyenga is a new member of the Sebastian County Medical Society. He was born in Honolulu, Hawaii. Dr. Reyenga was graduated from the University of Arkansas in Fayetteville in 1971, and received his M.D. degree from the University of Arkansas School of Medicine in Little Rock in 1975. He interned in Family Practice at the Area Health Education Center in Fort Smith.

Dr. Reyenga served two years in the United States Navy and is now located at Sparks Emergency Room in emergency medicine.



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**Warnings:** Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms (similar to those with barbiturates and alcohol) have occurred following abrupt discontinuance (convulsions, tremor, abdominal and muscle cramps, vomiting and sweating). Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

**Usage in Pregnancy:** Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

**Precautions:** If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed; drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

**Side Effects:** Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported, should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

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## SCIENTIFIC ARTICLES

Care of the Overdose Patient .....	249
<i>David P. Nicholson, M.D.</i>	
Neonatal Mortality In the 1974	
Arkansas Live Birth CoHort .....	254
<i>William D. Mangold</i>	

## FEATURES

ECG of the Month .....	260
<i>John W. Watson, M.D.</i>	
Office Orthopaedics:	
“Scoliosis — Update” .....	261
<i>C. Frank Dodson, Jr., M.D.</i>	
Public Health At A Glance:	
“Evaluation of the Arkansas	
Neonatal Hypothyroid	
Screening Program” .....	263
<i>Sam L. Shultz, S. Seyed, C. Morgan,</i>	
<i>L. Burkhalter, H. Schedewie,</i>	
<i>R. Fiser, and M. J. Elders</i>	
Woman’s Auxiliary .....	268
Editorial: “Through A China	
Window” .....	269
<i>Alfred Kahn, Jr., M.D.</i>	
Medicine in the News .....	271
Council Minutes .....	275
Keeping Up .....	277
Personal and News Items .....	278
New Members .....	279
Obituary .....	281
Things to Come .....	282
Membership Roster .....	283

## Care of the Overdose Patient

David P. Nicholson, M.D.\*

The impact of the overdose patient on an emergency room is an increasing and challenging problem. The circumstances may be hectic and the events bizarre, and the victim may be resented by the professional staff,<sup>1</sup> a reaction that is also evoked by the asthmatic. Frequently such acts reflect only temporary adverse social and personal crisis, more often seen in the young and the female. Once resolved the outcome is good and repetition unlikely.<sup>2</sup> Figures from two major urban centers in England illustrate a marked rise in admissions for self-poisoning between 1955 and 1975, with a 45% incidence of multiple drug ingestion.<sup>3-4</sup> Mortality is given as 0.52% of 25,132 incidents of self-poisoning, or as 3.1% of the 4,208 admissions to the hospital.

The immediate issue for the emergency room physician faced with a possible overdose situation is to identify the problem. It may be a confusing and bewildering situation complicated by the simultaneous ingestion of alcohol, or by the coincidental occurrence of head injury or brain disease. Reckless driving may initiate or follow a personal act of "auto da fe" whilst alcohol-induced hypoglycemia may be more significant than drugs in causing obtundation. Certainly all forms of alcohol should be included in the drug screen, and an immediate blood sugar determination is essential. In our alcohol oriented society perhaps subsequent intravenous glucose may be more important than the oft prescribed mannitol?

1. Is this an instance of drug overdose, or is there other or additional reasons for the obtundation: i.e. injury, alcohol, poisons.

2. If overdose is probable, what reliable information is available concerning the quantity and variety of drugs ingested, and what time has elapsed since the event.

Notwithstanding these considerations, immediate assessment and treatment must proceed swiftly. Vital functions must be monitored, while

the early placement of an intravenous or central venous line is essential. Once an intravenous line is established, and blood sugar and other laboratory work has been drawn, 50 ml of 50% glucose should be given. The preliminary examination must focus on respiratory, cardio-vascular, and neurological status, in case urgent resuscitation is required, and be followed by a careful general examination as early as convenient. Depending upon circumstances a flow sheet should be commenced to record blood pressure, heart rate, respirations, blood gases and chemistry, intake and output, and sensory level:

Grade 0. Fully awake.

Grade 1. Drowsy, responds to vocal commands.

2. No response to vocal commands. Maximum response to minimal painful therapy.

3. Minimal response to maximal painful stimuli. Tendon reflexes present but depressed.

a. Pharyngeal and laryngeal reflexes present.

b. Pharyngeal and laryngeal reflexes absent.

4. Totally unresponsive.

Such a flow sheet should be kept until the patient is fully alert and responsive, and vital functions are maintained unassisted.<sup>5</sup> In all but the mildest cases monitoring of cardiac rhythm and urine output will be required.

From the outset adequate samples of blood, urine, and vomitus or gastric aspirate should be kept for toxicological analysis. It is important to understand the needs of the toxicology laboratory, and to supply adequate samples, properly labeled and with the correct request. Since there is often doubt as to the nature of the substances ingested the laboratory may prefer to run qualitative screening tests on a 40 cc sample of urine, before proceeding to specific analysis on a further 30 cc of urine or 10 cc of clotted blood. In any

\*University of Arkansas for Medical Sciences, 4301 West Markham Street, Little Rock, Arkansas 72201.



event be aware of the capabilities and limitations of the laboratories involved.

The results of such drug analyses will not be available for a variable interlude, and to a degree treatment does not depend on such analyses, and should be initiated and continued on general principles. Indeed the results of the drug screen may only become available after the success of treatment is already determined.

It is useful to remember that a Phenistix test on serum and urine will be positive in acetylsalicylic acid poisoning at levels over 20 mgm%, provided the urine is not acid.

### RESPIRATORY SUPPORT

Respiratory depression leading to hypoxemia and hypercarbic respiratory acidosis, with attendant potential for cardiac arrhythmia, is the antecedent of respiratory arrest and death. Vomiting, or injudicious gastric lavage in the face of diminished laryngeal and cough reflexes, may lead to aspiration of gastric contents into the airway, a potentially lethal hazard.

The single most important aspect of treatment is the protection of the airway and support of ventilation, and full attention must be given to this before contemplating either gastric lavage or the use of Naloxone, both of which may result in aspiration of stomach contents or vomit. If nothing else is done for the overdose patient, airway control and adequate ventilation will result in a successful outcome in the majority of cases.

All patients, other than those in neurological grade 0, should have blood gases estimated and repeated as clinically judicious. All patients in grade 3 and 4 should be intubated if possible, and placed on a ventilator. Unless deeply obtunded intubation in these circumstances is not for the pupil or novice, and must be completed gently and swiftly, in order not to stimulate vomiting. Failure to intubate is more often due to poor positioning of the head and neck of the patient than to anatomical variations of the laryngopharynx. The normal response to the need for intubation is to see the neck of the horizontal patient hyperextended and lowered, thus totally dislocating any potential symmetry of axis between the laryngopharynx and trachea. The anesthesiologists refer to the "sniffing dog" position, cervical spine elevated, if needs be on a hard block, and the head then extended at the

atlanto-occipital joint. A position familiar to "inflexible" bronchoscopists, and one which at least aligns the pharynx with the trachea. There is no need to apologize if half an hour later the patient is sufficiently awake for the tube to be removed, so much the better, and the airway was safe.

Intubation safely performed, and the balloon properly inflated, protects the airway from the hazard of aspiration, and permits suctioning of secretions. Once this has been achieved it seems essential to assist the patient with mechanical ventilation. There is reasonable justification for this:

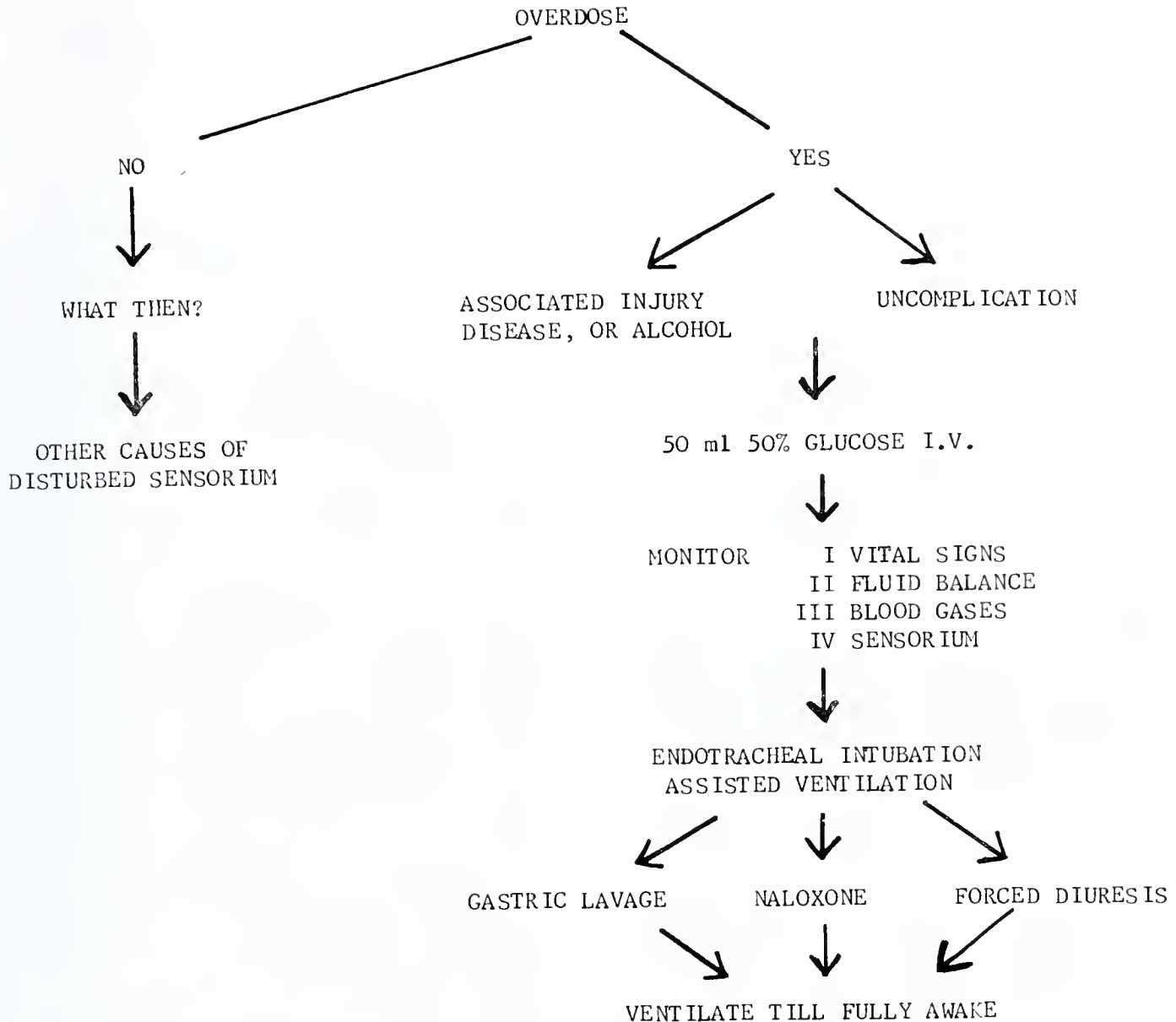
1. The majority of such patients will by definition have some degree of central respiratory depression, with associated reduction in tidal volume, alveolar ventilation, and arterial oxygenation, and a rise in arterial carbon dioxide.

2. An unknown number already will have vomited and aspirated stomach contents of unknown acidity. There is reasonable evidence that under these circumstances the tidal volume should be increased in order to prevent progressive atelectasis, and to enhance bronchial drainage. It is our custom to give tidal volumes in excess of predicted for age, sex, and height, and to commence ventilation at tidal volumes of 800-1200 cc, or 15 ml per Kgm. If the patient is deeply obtunded and unable to trigger the machine, then suitable adjustment of the respiratory rate will be required to avoid excessive hyperventilation.

Assisted ventilation should be continued until the patient is awake, coughing effectively, and able to sustain adequate ventilation off the respirator. Certain drugs, such as glutethimide, ethylchlorvynol, and the tricyclics, are more prone to be associated with sudden apnea and assistance should not be terminated prematurely.

Endo-tracheal intubation always carries a risk of laryngo-tracheal damage with the subsequent development of a stenotic lesion. Despite the rarity of this complication in patients intubated for short periods, great care and gentleness are required in the intubation, reintubation, and airway management.

JC. WF Age 22. Admitted 11/1/76, overdose and coma from ingestion of barbiturates. Intubated only for 48 hours, but this includes one episode for re-intubation. Discharged 11/11/76.



Re-admitted 11/17/76 with upper airway distress, requiring tracheotomy. X-rays and Xerograms showed tracheal stenosis. Subsequently had placement of a tracheal stent for five months, and later a plastic tracheal repair was not successful.

12/16/77 Before Stent operation forced vital capacity 950 ml; half second 186 ml; one second 392 ml.

#### GASTRIC LAVAGE

Forced emesis with syrup of ipecac or by use of parenteral apomorphine is unreliable and potentially hazardous, and neither form of therapy is reliable enough to be recommended.<sup>6</sup> Neither is there any good evidence that oral dilution with large volumes of water is effective, and may even enhance drug absorption.<sup>7</sup>

Gastric lavage, on the other hand, may have some justification if implemented within four

hours of drug ingestion, and not just exercised as a punitive function. The procedure can only be justified if it is performed safely, and if it is likely to produce a return of unabsorbed toxic material.

If a patient is seen within four hours of ingestion of a potentially lethal dose of drugs, and is in neurological class 0-1, i.e. is awake or arousable, then gastric lavage may be attempted with the following provisos:

1. The patient is being monitored, and facilities for adequate oropharyngeal suction and immediate intubation are at the patient's side.

2. A tube is used of sufficient diameter for effective lavage of particles of mixed size, is of adequate length with several end holes, and has suitable softness and flexibility. Size 32-36 French for adult (10.7-13 mm diameter), length 90 cm, or size 22 French (7.3 mm) for children, length 50 cm.\*



3. The patient is in a head down position and rotated more than 90° to one side.

4. If there is no return of gastric contents instill 100 ml of warm normal or half normal saline, and aspirate. Continue 300 ml washes until return is clear. Send an aliquot of the first wash for analysis.

Patients whose clinical neurological status is beyond grade 1 should not be considered for gastric lavage unless the airway can be protected by cuffed endotracheal intubation. A number of patients in grade 2 will not be sufficiently obtunded for gentle intubation, and should be closely observed. Gastric lavage should not be contemplated unless their condition worsens and intubation is successful. When gastric lavage is considered unsafe or contraindicated for any reason, the patient is able to swallow, and less than four hours have elapsed from the time of drug ingestion, then it is worthwhile to give 15 grams of activated charcoal<sup>†</sup> mixed with 50 grams of bentonite magma (USP) in 150-250 ml of water.<sup>8</sup> This is effective in absorbing a number of common drugs, and should be followed by a cathartic such as sodium sulfate 15 gm in solution.

If gastric lavage has been undertaken, then 15 gm of activated charcoal should be washed down the tube and the tube clamped for 20 minutes. Then wash out the stomach once more with 500-1000 ml of saline, give the saline cathartic through the tube, clear the tube with air and remove. If continuous gastric aspiration or further charcoal administration is considered for tricyclic drug ingestion, then at this time replace the large bore gastric lavage tube with a small bore naso-gastric tube. Another approach is to use the charcoal in the first lavage, and then leave some in the stomach at the termination of the lavage.

#### **NALOXONE (N-Allylnoroxymorphone)**

Naloxone is often given on the supposition that opium derivatives may have been ingested, and to observe any response to one or three injections of 0.4 mgm. Some response may be obtained if Pentazocine or Propoxyphene have been taken. A word of caution is appropriate, for if the patient is in grade 3 or 4 it is better to achieve airway control first, and then watch

the effect of Naloxone. Arousal accompanied by vomiting will not then be followed by dangerous aspiration.

#### **MANNITOL**

The administration of mannitol intravenously to enhance renal excretion of certain drugs may have some value, and is recommended in poisoning with salicylate or long-acting barbituates such as phenobarbital and cyclobarbitol. In salicylate poisoning mannitol probably adds nothing to a regimen of forced alkaline diuresis, though this may induce hypokalemia. In any event apart from the increase in urine volume the urine pH should be kept between 7 and 8. Some doubt has been cast on the efficacy of forced alkaline diuresis in salicylate poisoning, and only enhancement of urine volume with no increase in salicylate excretion has been noted. Likewise, forced diuresis is ineffective in tricyclic overdose.<sup>9</sup> In contrast there is fairly good evidence that the excretion of long and medium acting barbituates is enhanced by high urine flow and the appropriate addition of sodium bi-carbonate and potassium chloride to the I.V. fluid. In addition the maintenance of a good volume intake lessens the chance of hypovolemic shock.<sup>10-11</sup> Since this will involve the administration of 5% Dextrose in the equivalent of 1/3 normal saline, with 50 mEq of sodium bicarbonate and 20 mEq potassium chloride added to each litre, at a rate of 500 ml/hour, there will be occasions when central venous and wedge pressure monitoring should be performed.

#### **ANTIBIOTICS AND STEROIDS**

In general the respiratory system in a patient with drug overdose is not grossly infected, and there is no sound reason to give "blanket" antibiotic coverage. If radiographic infiltrates progress or persist, in conjunction with fever, leukocytosis, and purulent sputum, then antibiotics should be given if respiratory pathogens are identified.<sup>12</sup> Routine use of antibiotics does not prevent infection and may enhance the risk of resistant pathogens.<sup>13</sup>

If little can be said in favor of the routine use of antibiotics, nothing can be found to justify the routine use of corticosteroids. Corticosteroids have not been shown to affect the outcome of gastric aspiration, and are of doubtful value in gram negative rod shock.<sup>14-16</sup> The incidence of gram negative shock in these patients is so low

\*Moss Gastric Lavage Tube #000503. Davol HS 2500.

†Baker Chemical Activated Charcoal, Food Grade.

as to deter consideration of the use of corticosteroids on such grounds. Standard therapy should be instituted for circulatory or cardiogenic shock if present, and the management of such complications does not alter in the presence of drug overdose.

The immediate management of drug overdose patients rarely depends upon knowledge of the drug ingested, or upon the administration of an antidote. If vital signs are sustained, the airway protected, and assisted ventilation instituted early, then the risk of death from central depression, hypoventilation, and acidosis, will be minimized. The complications of this approach to therapy are less than may occur from the irrational intervention hallowed by custom.

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# Neonatal Mortality in the 1974 Arkansas Live Birth Cohort

William D. Mangold\*

## INTRODUCTION

The purpose of this paper is to examine neonatal mortality in the 1974 Arkansas birth cohort. As is well known, the likelihood that a newborn infant will die decreases dramatically during the first few hours of life. For example, over 40 percent of all infants who die in the first year of life succumb during the first 24 hours following birth; of all infants dying before their first birthday, 75 percent will die during the first month (NCHS, 1974, Table 2-2). Not only does the likelihood of death change rapidly during the first few weeks of life but the proportion of deaths from various causes also changes quickly. Initially, the largest concentration of deaths is from congenital defects or complications related to pregnancy and childbirth itself. As the interval following delivery increases, the proportion of deaths due to conditions in the local environment increases.

Reflecting both the rapid change in the probability of death and the shift in the causes of death, the infant period (first year of life) is divided into two major periods—the neonatal period which includes the first 27 days of life and the postneonatal period which spans the 28th through the end of the first year.

It has been suggested (Thomlinson, 1976, p. 157) that neonatal mortality is not a sensitive indicator of the health status of a population as is mortality that occurs at a later time following delivery. Because many of the deaths that take place during the first few hours or days of life are the result of congenital malformations or injuries related to either pregnancy or delivery, they are not as amenable to reduction as are deaths that are dependent upon conditions in the extrauterine environment. Although there is considerable validity to this idea, substantial variations in the distributions of deaths in the neonatal period remain as an indicator of the extent that mortality in the period is subject to control. Implicit in the argument that neonatal

mortality is not a sensitive indicator of the health status of a population is the notion that there is a threshold where little improvement in neonatal mortality is possible and that this threshold is universally attained.

## DATA AND METHODS

There are a number of ways that mortality among the newborn can be measured. The simplest measurement is to relate the number of infants that die within a specific period of time to the number of infants born during the same time period. Typically such a ratio is calculated for a calendar year and the result is defined as a yearly or period rate. The calculation of a period mortality rate, however, is subject to two criticisms: First, some of the events that take place in a given year (e.g., deaths) may not be matched by the number exposed to the risk of the event (births). In any specific year some of the infants dying were born in the preceding year and, of course, some of the infants born in a given year will not die until the next calendar year. If the level of fertility and mortality is fairly uniform from one year to the next, then the amount of distortion introduced by the use of period rates will be fairly small.

In addition to the greater likelihood of error inherent in the use of period rates, a second and more serious limitation affects their usefulness. Since two separate record sources are employed, the resulting rates can be made specific for information common to each separate record source. In order to calculate a rate for a specific characteristic (say, age of mother) age of mother would have to appear on both birth and death records. At present, only race, sex and residence are common to each separate record source.

An alternate basis to study mortality among the newborn is to follow the experience of a group of infants born during a specific period for the first year of life. Such a technique is termed a "cohort" analysis since it examines the mortality among infants born during a year irrespective of the year when death occurs. By

\*Department of Sociology, University of Arkansas, Fayetteville, Arkansas 72701.

searching all of the death records for a year following the latest addition to the birth cohort and matching the death record with the appropriate birth record, it is possible to obtain the mortality experience of the birth cohort. In addition to eliminating the major source of error inherent in period rates, the matched birth-infant death technique yields a greater amount of useful information. Because birth and death records have been matched, it is possible to calculate mortality rates for any category of information contained on the birth record. For example, mortality rates can be obtained for such important characteristics as age, the number of previous fetal losses, birth weight, or marital status.

In order to obtain the mortality experience of the 1974 Arkansas birth cohort, a list of unique identification numbers were used to match birth and infant death records. The identification numbers consisted of the volume and certificate numbers furnished by the Arkansas Health Department, Division of Health Statistics, and were based on visual comparison of the names and other unique information available on the actual birth and death certificates. For 1974, there were 32,295 births to resident Arkansans that were delivered inside the state. Among the 32,295 births there were 562 infants that died prior to their first birthday. Of the 562 deaths, it was possible to successfully match 557 with their birth records. The remaining five records could not be matched and have been excluded from the analysis.

### FINDINGS

The overall cohort mortality for 1974 reveals an infant mortality rate of 17.2 per 1,000 births or 557 deaths for the 32,295 births. The mortality rate during the neonatal period is 412/32,295 or 12.8 per 1000. As can be seen from Table 1, mortality among whites is substantially below that observed among nonwhites. The nonwhite infant mortality rate of 21.5 is 35 percent higher than is true for whites and the neonatal mortality rate 14.9 is 23 percent higher. Finally, the impact of social and economic conditions in the local environment are evident in that nonwhite postneonatal mortality is nearly 74 percent higher than the 3.8 per 1000 obtained by whites.

Differential mortality between males and females follows the well-established pattern where the likelihood of death is greater among males

**TABLE 1**  
**INFANT, NEONATAL AND POSTNEONATAL**  
**MORTALITY RATES FOR SELECTED**  
**CATEGORIES: 1974 BIRTH COHORT**

Category	Mortality Per 1,000 Births			N
	Infant	Neonatal	Post-neonatal	
All Categories	17.2	12.8	4.4	32,295
Race				
White	15.9	12.1	3.8	24,446
Nonwhite	21.5	14.9	6.6	7,849
Sex				
Female	15.4	11.3	4.1	15,558
Male	19.0	14.1	4.9	16,737
Birth Order				
1	13.2	10.2	3.0	14,066
2	17.0	12.5	4.5	9,768
3	22.7	15.5	7.2	4,223
4	27.0	22.2	4.8	1,890
5+	24.7	17.6	8.1	2,348
Prior Fetal Loss				
None	15.7	11.6	4.1	27,733
One	24.5	17.7	6.8	3,557
Two	30.3	21.6	8.7	694
Three or more	41.8	35.4	6.4	311
Marital Status				
Married	15.4	11.4	4.0	26,769
Not Married	27.9	19.5	8.4	5,226
Pregnancy Complication*				
No	12.4	8.2	4.2	29,810
Yes	77.0	70.7	6.3	1,909
Birth Injury†				
No	15.6	11.2	4.4	31,592
Yes	110.1	91.7	18.3	109
Age of Mother				
Under 15	29.7	14.9	14.8	202
15-19	20.4	15.0	5.4	8,199
20-24	15.0	11.0	4.0	12,220
25-29	15.4	11.1	4.3	7,467
30-34	23.5	18.7	4.8	2,889
35-39	15.3	13.4	1.9	1,043
40+	7.4	3.7	4.0	285
Age not stated	—	—	—	7
Attendant				
M.D.	16.9	12.5	4.4	31,864
Other	46.4	30.2	16.2	431
Birth Weight				
Under				
2500 Grams	118.8	110.2	8.6	2,441
2501 Grams and over	8.9	4.8	4.1	29,854

\*Missing data for 576 births.

†Missing data for 594 births.



(Shapiro *et al.* 1968, Armstrong 1972, Chase 1972). Looking briefly at the magnitude of the differences, it can be seen that the relative advantage of newborn females declines from 25 percent during the neonatal period to just under 20 percent by the end of the first year.

Although related to the age of the birth, birth order is only slightly related to the level of infant and neonatal mortality in the 1974 birth cohort. Mortality is lowest for first order births and increases monotonically with each additional child until the fifth and higher order when the rate dips slightly. Only postneonatal mortality is an exception to this pattern and displays an irregular distribution. The fact that mortality among infants of the fifth and higher order is lower than observed at lower parities is contrary to other studies (Kessner, *et al.*, 1973; MacMahon, *et al.*, 1973; Dort and Fort, 1976) where the higher birth orders were associated with higher mortality.

Neonates delivered by married Arkansas females recorded a cohort mortality rate of 11.4 which is 8.1 per 1,000 or 71 percent lower than observed among their unmarried counterparts. Reflected in this difference is not only the higher categorical risks attached to unmarried parenthood but other factors such as an increased number of single mothers being concentrated at the younger ages (U. S. Census, 1977). In addition, social and economic factors affect the survival of newborn delivered by single women. One indication of the effect that the social and economic factors have is evident from an examination of the postneonatal differential which is over two times higher among the unmarried.

One of the strongest relationships observable in Table 1 is between the number of previous fetal losses and mortality. Infants delivered by women without a history of fetal loss have a much lower probability of death during either the neonatal or postneonatal period than other newborn. As is clearly evident, each previous fetal loss increases the likelihood that the next delivery will end as an infant death. Indeed, the level of neonatal mortality is nearly an exact multiple of the number of previous fetal losses. For example, the risk to infants whose mother has three previous losses is nearly three times that observed among women without a previous loss (35.4 versus 11.6).

One of the largest differentials, and indeed

the largest nonbiologic differential, exists between women with an M.D. in attendance at the birth of a child and all other women. While the neonatal rate among mothers with an M.D. in attendance is 12.5 per 1,000, it was over 2.4 times greater among other women. It would be incorrect, however, to interpret all of the neonatal differential as simply due to the role of the physician, for the rate among infants in the remaining 11 months is almost four times higher among women without a medical doctor in attendance. Reflected here are the social, economic and environmental conditions of a number of women without the resources or ability to obtain proper medical care.

Taken together, the existence of a pregnancy complication or birth injury contributes significantly to the likelihood of the chance of survival among the newborn. As can be seen, a major component of neonatal mortality is the development of a problem during pregnancy or to the existence of a birth-related injury. The mortality among infants characterized as free from a pregnancy complication is less than one-eighth that observed when a complication was present. While the rate among the former was 8.2, it was 70.7 among the latter. Once a newborn has survived the first few days of life, this differential diminishes rapidly, and among decedents in the postneonatal period, the difference drops to 2.1 per 1,000. One of the largest differences observed in Table 1 is between infants with and without a birth injury. While the neonatal rate among the former is 92 per 1,000, the comparable level among newborn without an injury is 11.2. The 9:1 ratio observed during the neonatal period diminishes over the following months, but unlike the pattern associated with pregnancy complications, a substantial difference exists in the postneonatal period with the chance of death being over four times greater among infants with a birth injury.

One final relationship in Table 1 requires discussion. A major determinant not only of death, but of the timing between birth and death, as well as the cause of death is the extent of fetal development. Infants whose development has been too short or impaired in some way are of low birth weight and are far more likely to die (Chase, 1973; Kessner, *et al.*, 1973; Shapiro, *et al.*, 1968). Not only are infants of low weight more likely to die, but they do so soon after delivery.

From Table 1 it can be seen that the level of infant mortality is 118.8 for infants of "low weight" (under 5.5 lbs.) while it is 8.9 for infants whose weight is 2501 grams or over. Among infants who die in the neonatal period the effect of low birth weight is even greater—the risk of death among neonates of low weight is 110.2 per 1000 births or 23 times greater than is true of infants whose fetal development was more complete.

The mortality differentials in Table 1 document for the first time some of the detailed features of mortality among the newborn of Arkansas, and as such are of interest to health planners and students of infant mortality. There are, however, other findings obtained from the mortality experience of the 1974 birth cohort that are of more universal interest. Two such findings to be discussed below are the relationships between neonatal mortality and the frequency that a hospital performs obstetric services; and the relationship between mother's residence and neonatal mortality.

Earlier in this paper it was pointed out that because neonatal mortality was comprised of a large proportion of deaths due to congenital malformations or complications resulting from either pregnancy or childbirth, it was usually regarded as a less sensitive indicator of the health status of a population than deaths that took place in the postneonatal period. However, it was also

suggested that because of the existence of large variations in neonatal mortality one could not conclude that neonatal mortality was not subject to control. Although a larger proportion of deaths that occur in the neonatal period may not be as easily controlled as those that occur at a later point in time, a large proportion of neonatal deaths are influenced by environmental factors—the most important of which is the hospital where delivery occurs.

### Hospital Size and Mortality

Although it has long been recognized that the medical capability of a hospital is of prime importance in determining mortality among the newborn, no research can be found that specifically deals with the subject. It is known, however, that a major factor in the medical capability of a hospital is the frequency that a particular procedure is performed. In general, there is a direct relationship between the frequency that a particular procedure is performed and its success. Specifically, it is expected that the frequency that a hospital performs deliveries should be a major factor in the routinization of obstetric care and should be an important element in the odds of survival among the newborn.\*

Table 2 displays the neonatal mortality rates

\*It should be pointed out that there is probably a "self-selective" process here that may be independent of the capability of a particular hospital or medical staff. Certain hospitals, especially the larger and better equipped ones, may receive a higher proportion of high risk patients as part of a referral system.

**TABLE 2**  
**NEONATAL MORTALITY RATES BY NUMBER OF DELIVERIES,**  
**RACE AND BIRTH WEIGHT: 1974 LIVE BIRTH COHORT**

Number of Deliveries	WEIGHT IN GRAMS								
	All Deliveries				Whites			Nonwhites	
	Total	Under 2,500	2,500 & Over	Total	Under 2,500	2,500 & Over	Total	Under 2,500	2,500 & Over
All	12.8	110.2	4.8	12.1	123.8	4.7	14.9	87.8	5.2
Hospitals	(32,295)	(2,441)	(29,854)	(24,446)	(1,518)	(22,928)	(7,849)	(923)	(6,926)
Under 200	20.0	180.9	6.9	17.1	190.5	5.6	30.4	163.5	12.0
	(3,698)	(275)	(3,423)	(2,844)	(171)	(2,673)	(854)	(104)	(750)
200-399	10.8	91.4	4.8	10.6	101.8	4.8	11.2	66.7	4.8
	(5,714)	(400)	(5,314)	(4,596)	(286)	(4,310)	(1,118)	(114)	(1,004)
400-699	10.4	91.5	3.9	10.8	113.0	4.4	9.1	56.7	2.2
	(5,598)	(423)	(5,175)	(4,263)	(255)	(4,003)	(1,335)	(168)	(1,167)
700-1,099	9.7	96.5	3.3	9.4	102.3	3.3	11.2	79.2	3.5
	(4,046)	(259)	(3,787)	(3,589)	(209)	(3,380)	(457)	(50)	(407)
1,100 & over	12.9	107.3	4.5	12.6	124.0	5.0	13.5	86.8	3.1
	(12,776)	(1,040)	(11,736)	(9,008)	(586)	(8,422)	(3,768)	(454)	(3,314)
Not known—Not in a Hospital	30.2 (463)	136.4 (44)	19.1 (419)	27.4 (146)	272.7 (11)	7.4 (135)	31.5 (317)	90.9 (33)	24.6 (284)



by the number of deliveries performed, race and birth weight. Race of the neonate is included as a control as there are considerable differences between whites and nonwhites in terms of neonatal mortality. Birth weight has been included as a control since many of the newborn of low weight succumb quickly after delivery of congenital problems.

When the overall pattern is examined, it is evident that there are substantial variations in neonatal mortality for hospitals performing differing numbers of deliveries. An examination of the first column reveals a U-shaped distribution. While the neonatal rate is 12.8 irrespective of the size of the hospital, it is 56 percent higher among hospitals performing the fewest number of deliveries where the rate is 20.0 per 1,000. At the other end of the distribution, the rate is 12.9 among hospitals performing 1,100 or more deliveries. As can be seen, the lowest rates are obtained by the hospitals in the middle of the distribution. Hospitals that performed between 200 and 399 deliveries had a neonatal rate nearly one-half that recorded among the smallest institutions. Apparently, optimization of obstetric capability is attained quite rapidly since there is little variation among hospitals in the next two frequency categories; the rate for hospitals delivering 400 to 699 births is 10.4 while it is 9.7 among institutions in the next largest category. As should be expected, the level of mortality is much higher when an infant is delivered outside of a hospital. The rate among the e deliveries was 30.2 per 1,000 live births.

If the relationship between the frequency of maternal service and neonatal mortality is examined by birthweight, the same pattern persists and is *more pronounced among infants of low birthweight*. Although the number of births are fairly small, the neonatal mortality rate in the smallest hospitals is extremely high — 180.9 per 1,000. This rate is nearly two times higher than is observed among hospitals that performed between 200 and 1,099 deliveries. The largest hospitals again have a higher rate than is true of the middle-sized institutions. It is interesting to note that the risk of an infant dying in the first month of life is actually lower among births delivered outside of a hospital than in the smallest facilities.†

†Some of this difference could be the result of under-registration of both births and deaths among women not delivering in a hospital. This would be especially if the infant was of low weight. For a full discussion of the relationship between the completeness of registration, birth weight and mortality see Chase (1972).

For neonates of normal weight, the same pattern persists — higher odds of death in the largest and smallest institutions. Again hospitals performing between 700 and 1,099 deliveries have the lowest mortality levels with a neonatal rate of 3.3 deaths per 1,000 births.

When the race of the infant is examined, some important differences emerge. Among white infants, the pattern described above still is valid. However, for nonwhite infants some special features can be seen. First the difference between newborn delivered in the smallest hospitals and larger hospitals is much larger than was true for whites. As can be seen, the neonatal rate for nonwhites delivered in the smallest hospitals is 30.4 which is over two times higher than in the case for nonwhite infants in general and, in fact, is nearly the same as the rate for deliveries not occurring in a hospital. Also evident from the Table is that once the variations of hospital obstetric experience are removed the neonatal mortality experience of nonwhite neonatal is either the same or lower than for whites. If the rates for hospitals delivering between 400 and 699 infants are examined, the rates are 10.8 for whites and 9.1 for nonwhites. While the differential likelihood of survival among newborn of low birth weight is in favor of nonwhites, among infants of normal birth weight nonwhites have the lowest neonatal mortality rate observed — 2.2 per 1,000 births.‡ For the largest hospitals, nonwhite infants of normal birth weight again have an advantage over whites. The neonatal rate for whites is 4.5 per 1,000 and for nonwhites it is 3.4. Taking the broad categories represented by hospitals that performed between 200 and 1,099 deliveries, the neonatal rate for newborn of normal weight is 5.8 for white infants and 3.3 for nonwhites.

#### Residence and Mortality

Since the proximity of an expectant mother could affect both the nature and likelihood of receiving adequate health care, neonatal mortality rates have been calculated for deliveries taking place inside and outside of the mother's county of residence. It was expected that infants who were born in a different county from the mother's residence would experience higher mortality rates than would infants born inside the county of residence. As can be seen from Table 3, this pattern is found among members of the

‡The lower mortality of nonwhites of low birth weight is not unique to these data. See Shapiro, *et al.*, 1968, Armstrong, 1973, or Kessler, *et al.*, 1973.

**TABLE 3**  
**NEONATAL MORTALITY BY PLACE OF BIRTH**  
**BY RACE AND BIRTH WEIGHT**  
**1974 LIVE BIRTH COHORT**

Place of Delivery	WEIGHT IN GRAMS								
	Total			White			Nonwhite		
	Total	Under 2,500	2,500 & Over	Total	Under 2,500	2,500 & Over	Total	Under 2,500	2,500 & Over
Total	12.8 (32,295)	110.2 (2,441)	4.8 (29,854)	12.1 (24,446)	123.8 (1,518)	4.7 (22,928)	14.9 (7,849)	87.8 (923)	5.2 (6,929)
Inside County of Residence	12.1 (24,317)	101.8 (1,817)	4.8 (22,500)	11.8 (17,897)	116.2 (1,084)	5.1 (16,813)	12.8 (6,420)	80.5 (733)	4.0 (5,687)
Different County	14.8 (7,354)	134.6 (624)	4.6 (7,354)	12.7 (6,549)	142.9 (434)	3.4 (6,115)	24.5 (1,429)	115.8 (190)	10.5 (1,239)

1974 birth cohort. Ignoring birth weight and race for the moment, it can be seen that infants delivered in a different county from the mother's residence have a birth rate of 14.8 deaths per 1,000 while the comparable mortality for infants born inside the county of the mother's residence is 12.1. Also evident from the third column of Table 3 is the fact that a substantial number of deliveries occurred outside the mother's county of residence. The 8,000 deliveries that occurred in another county account for nearly 1 of every 4 births.

When birth weight is considered, the differential mortality by place of delivery is diminished for infants of normal birth weight (4.8 versus 4.6) but is much larger for infants of low birth weight. Among infants that weighed less than 2,500 grams, the neonatal mortality rates were 101.8 (same county) and 134.6 (different county). Expressed as a difference, the risk of death was nearly one third greater for infants born outside their mother's county of residence.

When the neonatal rates are calculated by race of the neonates, some sharp differentials emerge. First of all, a much larger proportion of white infants are delivered in the mother's county of residence: Nearly 27 percent of white births took place in the mother's county of residence while the corresponding figure for nonwhites is 18 percent. If birthweight is considered, the proportion of low weight infants delivered inside versus out-

side the mother's county of residence is 28 percent for whites and 20 percent for nonwhites.

A detailed examination of the neonatal mortality rates in Table 3 for race and birthweight shows divergent patterns between whites and nonwhites. Among infants of low birth weight, both white and nonwhite infants experienced a higher mortality risk if delivered outside the mother's county of residence. As can be seen, the risk increases from 116.2 to 142.9 for white neonates and among nonwhites the corresponding values are 80.5 and 115.8. In other words, both white and nonwhite infants of low birth weight experience a higher mortality rate if the county where they are delivered is different from the county of residence for the mother. The relative risk is increased 44 percent for nonwhites while it is increased by 23 percent for whites.

Among newborn of normal birth weight the impact of place of delivery is reversed for white and nonwhites. Among white newborn, the likelihood of death is 1.7 per 1,000 births lower when the mother has her baby in a county other than the county of her residence. However, among nonwhite infants, the opposite is true — the rate is 6.5 *per 1,000 births higher*. Or, stated in relative terms, the typical white infant born in the mother's county of residence has his risk of death reduced by one third while the similar nonwhite newborn has his odds of death *increased by two and one-half times*.







## ELECTROCARDIOGRAM

## OF THE MONTH

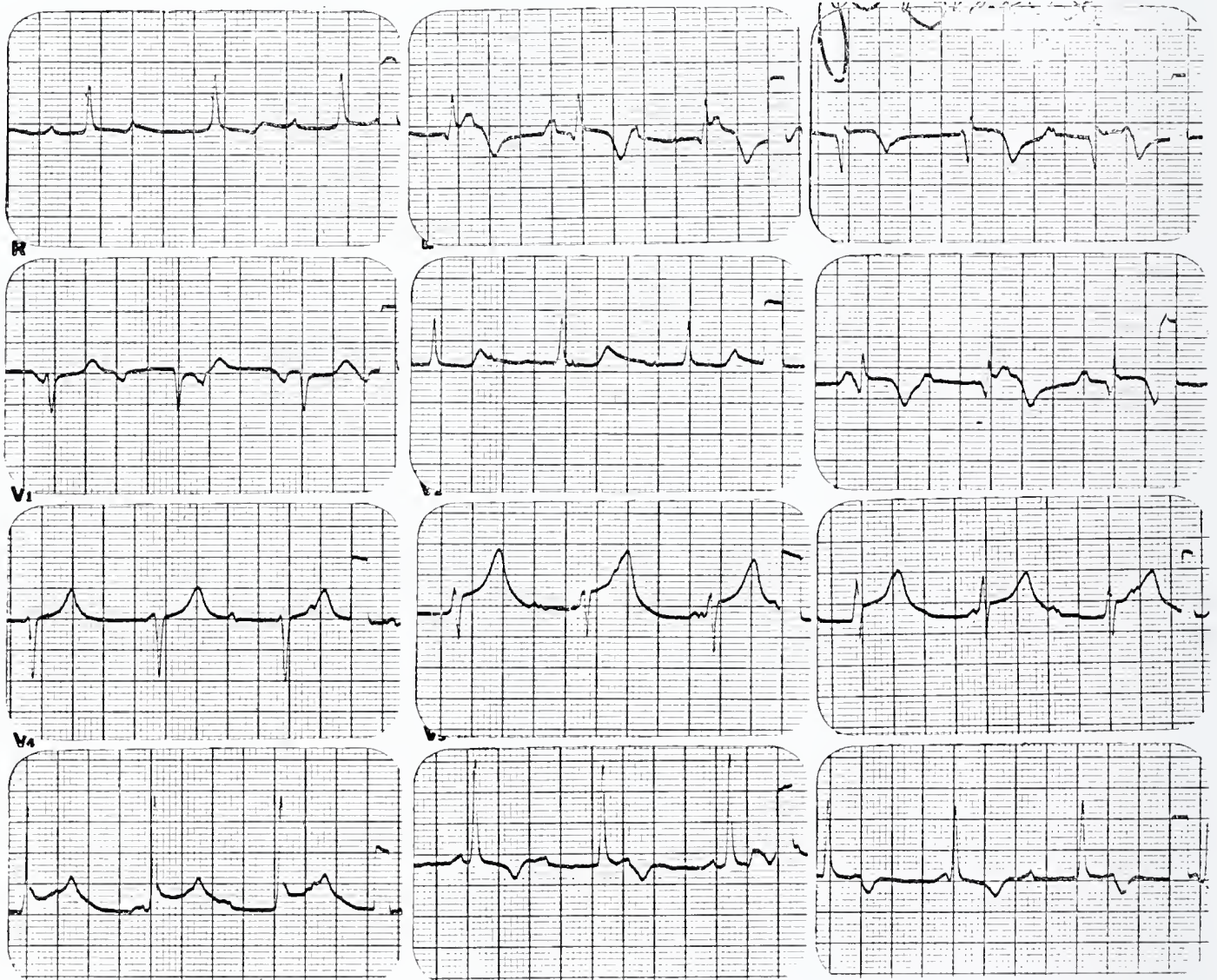
The Department of Cardiology, University of Arkansas College of Medicine

(See Answer on Page 268)

HISTORY: Mr. B. is a 77-year-old man who had presented to the hospital three days earlier with inferior infarction of the myocardium. On his third hospital day, he developed diffuse chest pain which was eased with assumption of the erect posture. His physical examination revealed pericardial friction rub. His ECG is shown.

Which of the following statements are true and which are false?

1. His friction rub should have three components.
2. He has Dressler's syndrome.
3. One can help exclude anterior extension with another series of sequential enzymes.
4. An echocardiogram would be unlikely to show a large pericardial effusion.



John W. Watson, M.D.  
Assistant Professor  
Division of Cardiology  
University of Arkansas for Medical Sciences  
4301 West Markham  
Little Rock, Arkansas 72201



# Office Orthopaedics

## Scoliosis — Update

C. Frank Dodson, Jr., M.D.\*

Since Doctor H. A. Grimes' article of April, 1975, "Scoliosis ("crooked (Gr.) spine")", knowledge, terminology and treatment methods of scoliosis have undergone considerable evolution and some of the newer facets of interest will be presented herein.

### TERMINOLOGY

The Scoliosis Research Society has designated the term "genetic scoliosis" to supersede the previously used "idiopathic scoliosis" since several recent surveys collaborate in demonstrating a strong familial hereditary tendency of this spinal affliction. The basic cause of this form of scoliosis is still not known. Definite alterations of electromyographic activity between the paraspinous muscle groups on each side of the affected portion of the spine have been demonstrated, suggesting possibly a muscular origin, with the bony changes being secondary. The other major types of scoliosis retain their previous designations (i.e. neuromuscular, congenital, mesenchymal, post-traumatic, etc.). The impetus for the name change is aimed at emphasizing the need for evaluating the other family members for scoliosis and counseling of the affected patients to make them aware of the likelihood of disease occurring in their offspring. A study at Alfred I. Dupont Institute showed that 43% of the sisters and 29% of the brothers of patients with genetic scoliosis had significant scoliosis as well

### DETECTION METHODS

Visual and limited examination of school children at the school for scoliosis (school screening programs) are underway on a limited basis in Arkansas. The preliminary screening is usually

done by a physical education instructor or school nurse, then suspected cases are further evaluated by a physician at the school; the children then thought to have significant deformity are informed of this fact and are advised to be evaluated by an orthopedic surgeon and X-rayed. Similar programs have been in operation in other states for several years; the result is that scoliosis treatment is started sooner and generally better treatment results are obtained, and the horrible Kypito-scoliotic deformities of adulthood are precluded.

Although the mainstays of diagnosis are still the history, physical examination and standing anteroposterior X-rays of the spine, new methods are on the horizon. Moiré Fringe topography is being used to provide a safe, inexpensive method of graphically evaluating scoliotic patients. The patients are photographed with Moiré Fringe light beam cast on their backs, so there is no radiation exposure incurred and a permanent record is obtained. The main application of this method is to follow patients and evaluate changes rather than for initial diagnosis. The shortcomings of this method is that it allows measurement of the secondary effects of the scoliosis (rib hump from vertebral rotation) rather than the spine deformity itself, but the technique is in its very early stages of development and may become more widely used in the future.

### TREATMENT

The primary treatment methods of scoliosis remain orthotic and surgical. The Milwaukee spinal orthosis developed by Doctor Walter P. Blount in the 1940's has undergone alterations through the years, and now, is more comfortable and effective, and causes fewer complications.

\*Little Rock Orthopedic Clinic, P.A., Post Office Box 5270, Little Rock, Arkansas 72215.



The pelvic mold portion of the orthosis is currently usually constructed of orthoplast or polypropylene instead of molded leather over steel frame and consequently is more durable, lighter and comfortable. The upright supports are generally made of aluminum alloys which are strong and light-weight. The original chin cup has been eliminated and a polypropylene or metal "throat mold" is shaped to conform to each patient—it does not exert direct pressure on the patient's mandible—thus eliminating the complication of "buck-teeth" which was a major problem in the past. The throat mold stimulates the patient to extend the neck and lever against the occipital pads thus inducing the vertical distraction force on the spine. The major objection to the orthosis by the wearer is the appearance, especially when worn by teenage girls.

A different sort of orthosis is now being used for treatment of less severe curves, with their apices at T-10 or lower (low thoracolumbar and lumbar curves)—the underarm (Boston) spinal orthosis. This torso-pelvic jacket is usually constructed of 3/16" molded plastic and lined with a type of orthopedic foam (Pelite) and is similar to the pelvic portion of the Milwaukee brace with an upward extension of the thermoplastic onto the torso, but with no metal uprights, occipital pad or throat mold. As this orthosis is molded very closely to the body contours and does not extend cephalad to the axilla, it is much better accepted by the patients who wear it. Indications for application are limited by the type and severity of the curve under treatment.

Scoliosis exercises continue to be of benefit only in conjunction with orthotic application, but are just as important as the wearing of the orthosis in achieving desirable results; exercise alone is of little, if any, benefit in the treatment of scoliosis. The use of orthotics is still largely confined to the skeletally immature patients except for occasional adults who desperately need partial correction of their deformity to allow adequate pulmonary ventilation and are not acceptable operative candidates.

Electrical stimulation is being used on an

experimental basis to treat mild, single curve scoliotic patients. This treatment concept arises from the paraspinous muscles on the concave aspect of the curve are more active electromyographically in the disease state and by electrically stimulating the contralateral paraspinous muscles (on the convex side of the curve) the curve is reversed—usually during the sleeping period only and this counteracts the deforming force such that the curve increase progression is stopped or possibly improvement in the deformity is obtained. The obvious advantages are that the patient does not have to wear an orthosis or have surgery—the treatment is administered at night when the patient is asleep. Currently the method is in the investigational phase and results are highly variable and indications for its use are not well established. Surgery is indicated for patients with 45 degrees or greater curvature, with exceptions as indicated by symptoms, failure to respond to conservative treatment methods, or neurological manifestations of spinal cord or nerve root impingement. Harrington instrumentation with posterior spinal fusion and post operative jacket cast or brace remains the primary operative treatment for severe genetic scoliosis. Other forms of instrumentation have been devised—Weiss springs for posterior approach correction have not proven generally efficacious. However, Dwyer cables and screws seem to have a definite place in the therapeutic armamentarium of the scoliosis surgeon. Dwyer instrumentation is primarily indicated for lumbar curvatures especially when associated with excessive lordosis; this device is applied through an anterior approach to the vertebral bodies and acts as a temporary internal splint while fusion occurs. It may be used in conjunction with posterior fusion, with or without Harrington instrumentation.

### SUMMARY

Some of the recent developments in the realm of scoliosis knowledge have been presented for your perusal; additional development to further improve upon diagnostic treatment and follow-up methods is expected in the future.





## Evaluation of the Arkansas Neonatal Hypothyroid Screening Program

Sam L. Shultz, S. Seyed, C. Morgan, L. Burkhalter,  
H. Schedewie, R. Fiser, and M. J. Elders\*

Recently, the Arkansas State Legislature appropriated \$24,000 for the State Health Department to use in setting up a trial program for the screening of congenital hypothyroidism in Arkansas. This appropriation was based on data which suggests that congenital hypothyroidism is probably the most preventable cause of mental retardation when detected and treated early. The incidence is approximately twice that of phenylketonuria (PKU) and six times that of galactosemia. Thyroid hormones are essential for normal brain growth and development, which is almost 50 percent complete by six months of age; therefore, early detection and treatment is crucial if intellectual deficits are to be prevented.

The critical period for thyroid hormone effects on the central nervous system is not entirely clear. Morphologically, the brain of a patient with cretinism is distinguished by a decrease in size, close packing of the neurons in the sensory and motor cortex, and hypoplasia of axons and dendrites. All of these abnormalities can be reversed by thyroxine treatment in the rat, and presumably in the human, if treatment is started early.<sup>2</sup>

Thyroid hormone stimulates RNA and protein metabolism as one of its essential roles in maturation of the brain. Once the brain matures, the neurons lose their thyroxine sensitivity which may explain the lack of direct effect of thyroid hormones on the adult human brain, whether

normal or cretinous.<sup>2</sup> Children diagnosed and treated before three months of age had IQs greater than 90, but only about one-third of those detected after three months of age reached that level. Clinically less than one-third of affected infants can be diagnosed early on clinical grounds alone. This throws the burden of early detection on thyroid function tests.<sup>1</sup>

The placental transfer of thyroid hormone and TSH is markedly limited. It is doubtful that the human fetus can absorb enough  $T_4$  via the amniotic fluid to insure normal growth.<sup>1</sup> The fetus can absorb approximately 3ug of  $T_4$  per day through amniotic fluid, although the human fetal requirement for  $T_4$  is unknown.<sup>3</sup> The fact that the fetus can absorb  $T_4$  from the amniotic fluids provides one possible means of therapy for fetuses known to be thyroid hormone deficient.

The most common abnormality of thyroid function in the newborn in non-goiterous regions of the world is *congenital hypothyroidism* due to thyroid agenesis or dysgenesis. Sixty to 80 percent of infants and children with non-goiterous, non-endemic hypothyroidism have residual thyroid tissue in the usual position or in ectopic areas, usually in the midline.<sup>4</sup> The screening program would miss a portion of these infants the first time around because of residual functioning tissue. On the other hand, the most important period for clinical consideration of primary hypothyroidism is in the newborn nursery. This is where early thyroid replacement in affected infants should be initiated. Ideally, it would seem reasonable to strive for routine screening tests at the time of discharge for congenital

\*Arkansas Department of Health, Maternal and Child Health Division, 4815 West Markham, Little Rock, and Pediatric Endocrine Clinic, University of Arkansas for Medical Sciences, 4301 West Markham, Little Rock.

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hypothyroidism, plus an awareness of the post-natal signs of hypothyroidism.<sup>5</sup>

A distant second cause of primary congenital hypothyroidism is thyroid *dys hormonogenesis*. This is thyroid hormone deficiency due to any one of several possible defects in enzymatic machinery necessary for thyroid hormone biosynthesis.<sup>1</sup> Infants with such a deficiency develop compensatory goiter, but this may not be apparent until several weeks of age. Congenital hypothyroidism can also be caused by absent or deficient pituitary TSH or *secondary hypothyroidism*. An abnormality of the hypothalamus with a deficiency of thyroid hormone releasing hormone (TRH) is called *tertiary hypothyroidism*. Hypothalamic TRH deficiency or pituitary deficiency may occur as an isolated defect or in association with other hypothalamic or pituitary hormone deficiency. Both deficiencies result in low circulating levels of TSH in the presence of low levels of thyroid hormones.<sup>1</sup> The TRH stimulation will help differentiate TRH and TSH deficiency.

*Thyroid binding globulin (TBG) deficiency* is a relatively frequent entity with an incidence of 1 in 14,000 births.<sup>9</sup> Recent studies suggest that both deficiencies and excesses of TBG represent mutations at a single X-linked locus regulating the rate of TBG synthesis.<sup>4</sup> Infants with deficiency or excess of TBG do not manifest clinical thyroid dysfunction, but the family should be alerted to this abnormality since the low serum T<sub>4</sub> concentration characteristic of TBG deficiency might mislead a physician to a diagnosis of hypothyroidism.<sup>9</sup> In TBG deficiency serum T<sub>4</sub> is low and T<sub>3</sub> resin uptake is high, but free T<sub>4</sub> concentration is increased and T<sub>3</sub> resin uptake is lowered. Free T<sub>4</sub> and T<sub>4</sub> turnover are again normal for age; however, the diagnosis can be confirmed by measurement of the binding capacity of TBG or of TBG concentration by radioimmunoassay.<sup>1</sup> Table 1 summarizes the spectrum of

laboratory values in different neonatal thyroid disorders.<sup>1, 6, 7</sup>

**Clinical Manifestations of  
Congenital Hypothyroidism**

Signs and symptoms in cretinism are usually obvious by six weeks of age. Few clinical manifestations are present at birth but often appear during the first one to three weeks of life.<sup>5</sup> The early symptoms are non-specific and include lethargy, feeding difficulty, constipation, persistent neonatal jaundice and respiratory distress. About one-third of hypothyroid infants will present with noisy respiration, persistent nasal stuffiness, a hoarse cry, intermittent cyanosis or both. Such respiratory symptoms result from myxedema of the tongue, epiglottis, posterior pharynx and larynx. Mild hypothyroidism with remnants of thyroid tissue may have delayed signs and symptoms which are not manifest for three to four months or longer, but are similar to those in cretins with early manifestations except that respiratory symptoms are less prominent. Classically, cretins present with an enlarged tongue, abdominal distention, umbilical hernia, puffy facies, dry hair and skin hypotonia.<sup>5</sup> These manifestations appear relatively late and indicate hormone deficiency of at least six to twelve weeks duration. Suspicion of hypothyroidism, by early non-specific symptoms or by the history of previous cretins in the family, should lead to measurement of serum T<sub>4</sub> and TSH in the neonatal period. The proximal tibial or distal femoral epiphysis are present in nearly all term infants. Absence of the distal femoral epiphysis in newborns weighing 3000 grams or more, or absence of the distal femoral and proximal tibial epiphysis in infants weighing 2500 to 3000 grams at birth suggests intrauterine thyroid hormone deficiency.<sup>4</sup> Guyda, et al, formulated an Apgar-like checklist in 1977 from University of Montreal.<sup>6</sup> In this checklist a newborn baby with all the classic signs

**TABLE 1**  
**SPECTRUM OF LABORATORY VALUES IN NEONATAL HYPOTHYROIDISM**

Diagnosis	Filter Paper Spot				Serum		131 I Uptake	Thyroid Tissue
	T <sub>4</sub>	TSH	T <sub>4</sub>	T <sub>3</sub>	RT <sub>3</sub>	TSH		
Primary hypothyroidism	↓	↑	↓	↓	N	↑	↓	+ or —
Hypothalamic or hypopituitary hypothyroidism	↓	N	↓	↓ or N	N	N	↓	+
Dys hormonogenesis	↓	↓ or N	↓	↓ or N or ↑	?	↑ or N	N or ↑	Goiter

of the disorder will have a score of 15 and a normal baby will score 5 or below. A score above 5 spells "Hypothyroid" (Table 2).

A score above 4 calls for immediate laboratory studies.<sup>6</sup> This scoring may be used to diagnose hypothyroid clinically, especially in a place where screening for congenital hypothyroidism is not being done. However, mass screening programs are more effective in conditions not readily identifiable clinically.

The incidence of hypothyroidism is 1 in 5,000 to 1 in 6,000 documented from several geographic areas.<sup>1,3,5,7,8,9</sup> In Arkansas, with 32,000 births per year, we could expect to see 5 to 7 cases annually. Sex and race are influential factors. Females are affected more frequently than males and there appears to be a greater incidence in caucasians.<sup>10</sup> Prematurity and its related stresses seem to be associated with increased incidence of abnormal thyroid function. The 32 to 35 weeks gestation infant can usually be evaluated by existing biochemical methods such as TSH and  $T_4$ . These guidelines may be less useful in the more premature infant. From a practical standpoint, hypoxia, respiratory distress syndrome, sepsis, and other known neonatal stresses lower  $T_4$  values.<sup>11</sup> The most sensitive indication of primary hypothyroidism is an elevated TSH even in mild disease, while the serum  $T_4$  may remain within the normal range.<sup>1,3</sup> Klein, et al, found only 28 percent of a group of biochemical hypothyroid infants to have more than one clinical feature of the disease and the majority (72 percent) had normal bone age on x-ray.<sup>3,11</sup>

The original work on thyroid screening was

**TABLE 2**

**APGAR SCORING FOR HYPOTHYROIDISM**

Hernia, umbilical	2
Y chromosome absent (i.e., female)	1
Pallor, coldness, or hypothermia (35° c)	1
O edematous or typical facies	2
Tongue enlarged	1
Hyptonia	1
Yellow (icterus lasting three days)	1
Rough, dry skin	1
Open posterior fontanelle (0.5 cm)	1
Inactive defecation	1
Infrequent stools	1
Duration of gestation over 40 weeks.	1
Birth weight over 3.5 kg	1
	<hr/> 15

reported from Quebec in 1976, covering 175,000 infants in a two-year period, diagnosing 28 cases.<sup>8</sup> Heelstick blood dripped onto filter paper in conjunction with the PKU was tested for  $T_4$  by radio-immunoassay. Babies with a high TSH were admitted for endocrine evaluation. In Quebec, screening is now routine for PKU, tyrosinemia, galactosemia, and hypothyroidism by using one series of seven spots of blood on filter paper collected from each infant. Optimal testing is available for a number of other inborn defects.

The conclusion was drawn from pilot programs for thyroid screening done in Quebec, Pittsburgh, Toronto, Oregon, and New England. In this study of 429,000 infants, congenital hypothyroidism was detected in 79 infants and missed in two, giving an incidence of about one in 5,300 live births.<sup>1</sup> Of the 79 detected cases, 68 were found to have primary hypothyroidism, six had dyshormonogenesis, and five had secondary hypothyroidism.<sup>1</sup> In Quebec and Toronto a total of 36 patients with TBG deficiency were detected. Thus, in every 6,000 patients screened, approximately one percent or 60 infants would be found with suspicious  $T_4$  values. Only about one of these would actually have primary hypothyroidism which would be quickly confirmed by a high TSH. Most of the other 59 will be normal, but an occasional patient may have secondary or hypothalamic-hypopituitary hypothyroidism or far more commonly TBG deficiency. In patients who have a low  $T_4$  but normal TSH, a blood sample is recalled and serum  $T_4$  and TSH measurements done. If both are still low, some test of thyroid binding capacity such as TBG,  $T_3$  resin uptake, or a free  $T_4$  determination is performed. If TBG concentration is found to be depressed or  $T_3$  resin is elevated, then the low  $T_4$  can be attributed to TBG deficiency and in this case no therapy is indicated. On the other hand, if the binding capacity turns out to be normal and the free  $T_4$  is low, a defect in thyroid releasing hormone from the hypothalamus, TSH production, or thyroid dyshormonogenesis is suspected. The incidence of secondary or tertiary hypothyroidism is low, about 1 in 60,000 newborns, and the hypothyroidism tends to be less severe.<sup>1</sup>

**Screening in Arkansas**

Screening for hypothyroidism in Arkansas was initiated in November, 1977. Most Arkansas



hospitals participate in this program. They submit heelstick blood on filter paper to the Arkansas Health Department in conjunction with blood for PKU testing. The same sample is used for hypothyroidism screening provided adequate blood was dripped onto the filter paper. Radio-immunoassay for T<sub>4</sub> is done in the Genetic Laboratory, Division of Public Health Laboratories, Arkansas Department of Health. Approximately 200 T<sub>4</sub> samples can be run daily. The lowest three percent are also assayed for TSH. A combination of a low T<sub>4</sub> and elevated TSH are reported immediately to the physician by the medical consultant or the nurse practitioner. The value may be presumed to be normal unless follow-up correspondence is sent from the Maternal Child Health Division.

From November 1977 to December 1978 a total of 33,142 specimens were screened in the Division of Public Health's Genetic Laboratory representing 31,142 infants.

Repeat T<sub>4</sub> and TSH tests were performed on the lower three percent of the samples screened for a total of 1,230. A low T<sub>4</sub> and a high TSH were found in seven infants, and a low T<sub>4</sub> with normal TSH were found in two infants. A summary of the biochemical and clinical features of these nine infants are shown in Table 3.

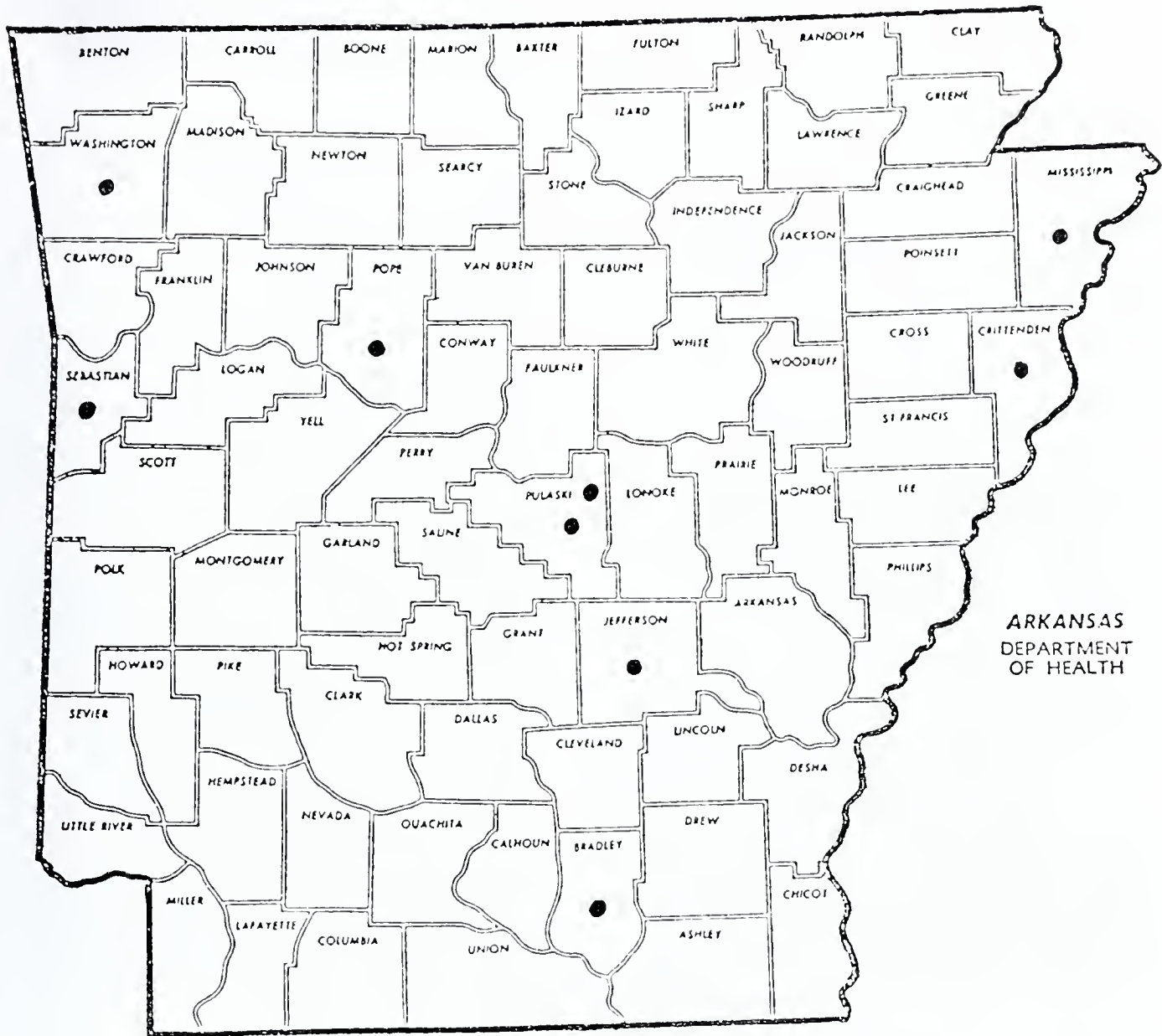
As in previous studies, the incidence in females was twice that found in males. The age of initial screening varied from three to 53 days and follow-up serum specimens were delayed from eight to 88 days. The American Academy of Pediatrics has recommended that thyroid testing be done upon discharge from the newborn nursery.<sup>12</sup> Seven of our patients had primary hypothyroidism and two had TBG deficiency. Only three of these infants presented with clinically recognizable signs and symptoms of hypothyroidism as in other studies.<sup>1,3,5</sup>

The counties in which these children were born are shown in Figure 1. It can be seen that

TABLE 3  
CLINICAL AND BIOCHEMICAL FEATURES OF PATIENTS DIAGNOSED  
AS CONGENITAL HYPOTHYROIDISM AND TBG DEFICIENCY

Race	Sex	Screening Spec. Age/day	Result	Serum Spec. Age/day	Result	Clinical Finding
B	F	53	T <sub>4</sub> 2.34 TSH 157.29	76	T <sub>4</sub> 4.8 TSH 167.8	None
W	F	47	T <sub>4</sub> 0.0 TSH 532.05	88	T <sub>4</sub> 0.00 TSH 558.11	Classical cretin. Poss. Slight retarded bone age
W	F	3	T <sub>4</sub> 5.42 TSH 199.32	8	T <sub>4</sub> 3.28 TSH 153.81	Weak cry, umbilical hernia, large tongue
W	M	3	T <sub>4</sub> 3.42 TSH 84.59	55	T <sub>4</sub> 12.9 TSH 84	None
W	F	17	T <sub>4</sub> 2.82 TSH 335.15	28	T <sub>4</sub> 2.6 TSH >50	Lethargic
B	M	28	T <sub>4</sub> 3.33 TSH 53.70	72	T <sub>4</sub> 3.8 TSH >50	None Normal bone age
W	F	23	T <sub>4</sub> 0.18 TSH 465.96	35	T <sub>4</sub> 1.2 TSH >50	Constipation, thick tongue, lethargic, hoarse cry
W	M	16	T <sub>4</sub> 2.54 TSH —	35	T <sub>4</sub> 2.34 TSH 9.02 TBG def.	None
W	F	?	T <sub>4</sub> 3.31 TSH 12.68	40	T <sub>4</sub> 1.22 TSH 2.86 ↓ TBG 1.5	None Normal bone age

Figure I. DISTRIBUTION BY COUNTIES OF PATIENTS DETECTED BY NEONATAL HYPOTHYROID SCREENING PROGRAM



the infants were detected throughout the state and not concentrated in any particular area. We feel the screening program has been of great importance in Arkansas primarily because of the benefits it offers to both patients and physicians.

It is recommended that each child with positive screening results be referred for a total thyroid work-up by the Pediatric Endocrine Clinic at Arkansas Children's Hospital upon notification of the abnormal laboratory data. An appointment will be made if desired and all patients will be seen within three to seven days following notification of an abnormal result.

*Treatment:* Congenital hypothyroidism, with or without goiter, should be treated promptly with adequate replacement doses of thyroid hormone in order to prevent irreversible central

nervous system damage. Sodium-L-thyroxine (Synthroid) is the medication of choice. The best guide to adequacy of therapy is the measurement of circulating levels of  $T_4$ , TSH, and on occasion  $T_3$ . The history and physical are important in follow-up, but mild hypothyroidism cannot always be detected in this way. The serum  $T_4$  should be adjusted to be midnormal,  $TSH < 20 \text{ ug/dl}$ , and  $T_3$  70-250 ng/100 cc. Two to three weeks are usually required to observe the maximal effects from a constant dosage. Suggested replacement doses of Sodium-L-thyroxine are 1 ug/kg/day for the newborn. The usual total dose ranges between 30 ug and 90 ug. We usually start them on 50 ug of Synthroid. The growth rate should be markedly accelerated after initiation of therapy with the growth deficit



usually restored within nine to 12 months, but the enlarged tongue may not disappear for many months. Over-treatment produces tachycardia, excessive nervousness and disturbed sleep patterns. Excessive dosage over a longer period of time produced osteoporosis, premature synostosis of cranial sutures and undue advancement of bone age.<sup>4</sup>

#### Addendum

In the first nine months of 1979, four additional babies with hypothyroidism have been detected. Two were white females, one black female, and one was white male. Only one had clinical signs of the disease.

**TABLE 4**  
**SUMMARY OF ARKANSAS**  
**HYPOTHYROID SCREENING PROGRAM**  
**November 1977 - December 1978**

33,724	Number of specimens received
31,751	T <sub>4</sub> tests performed
1,230	TSH tests performed
161	Unsatisfactory
33,142	Total tests
31,142	Number of infants screened
7	Low T <sub>4</sub> , high TSH
2	Low T <sub>4</sub> , normal TSH
2	Low TBG

The numbers of specimens received, total tests conducted, and the number of infants screened will not necessarily correlate since there is always a hold-over from the preceding month. Numerical fluctuations normally appear when unsatisfactory specimens cannot be tested.

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#### Medical Society Awarded

The Sebastian County Medical Society received a certificate of commendation from the American Association for State and Local History for compiling and publishing "Physicians and Medicine: Crawford and Sebastian Counties, Arkansas 1817-1976." Mrs. Art Martin headed the publication project.

#### ANSWER—Electrocardiogram of the Month

**DISCUSSION:** The ECG shows AV dissociation with changes of inferior infarction of unknown age and ST elevation in V2-V4. With atrial activation being inconsistently related to ventricular activation, one would generally expect to hear but two components. Pericarditis related to an infarct typically occurs in the first few hospital days, but Dressler's syndrome should occur much later. A secondary rise in enzymes would suggest extension of the existing infarct or infarction in another region of the myocardium. The pericarditis associated with transmural infarction generally is associated with small effusions, but this may vary. Thus, 1 and 2 are false and 3 and 4 are true.



## EDITORIAL

# Through A China Window

Alfred Kahn, Jr., M.D.

A visit to China is a beguiling and rather entrancing experience. At the outset, one ought to put aside the cliché “a visit is so short, the information is not a representative sample.” True, but it is not necessary to live years in an area to observe some patently obvious trends.

The port of entry for most visitors to the People's Republic of China is a bridge just north of Hong Kong — the amount of money brought in is declared and there is a superficial luggage examination conducted over a period of several hours — always polite, correct, and very precise. The visitors wait for P.R.O.C. train in an old building which is spotlessly clean; it is like a ride into the early 1920's in appearance. The waiting rooms and dining halls are situated near enough the railroad tracks to hear the squeal of pigs going to Hong Kong — and certain porcine aromas waft up. Tea is served constantly and the sipper has to contend with the leaves which are always left in the cup; you try to blow them out of the way.

The food throughout China is fascinating, well-served, tasty, and plentiful — but what?? The most frequent meal table gambit is “Please, pass THAT. It's good. But what is it?” Only the cultivated palate could clearly distinguish the Southern Chinese cooking from the Northern. Knowing foreigners fear of drinking water, there are usually two beverages served: beer and orange soda pop — both good. Desserts — virtually never.

The countryside in south China viewed from the rail line is highly cultivated — rice in a large measure — both small and large farms with intensive ground utilization, even small flat areas on hills and mountainsides. There are a lot of water buffalo and invariably a farmer idling alongside the slowly moving buffalo. There were

an amazing number of powerlines for a supposedly underdeveloped country. There were almost no solitary farm houses. The farmers seemed to live in small villages with varying degrees of modernity from mud brick to modern red baked brick — but all, very, very small. The farms were either government owned or collectively owned with some small ancillary plots for private enterprise.

The first city seen by most visitors is Canton. It has a hotel which, like almost every Chinese hotel, is very comfortable, very roomy, but suggests the 1920's. The food is good. The service is good. There is no tipping. The plumbing is creaky but works fine. There is no need to lock the rooms or belongings — beggars, thieves, pilferers, dope addicts just were not seen by us and their existence must be minimal.

The streets are usually teeming with people; every day is someone's day off. The number of people is really overwhelming. They are invariably polite; they are invariably curious. The costumes do not follow any special pattern in southern China. In the northern cities the Mao suit seems to predominate. The streets are filled with bicycles — often they appear like a tidal bore with bells jangling. There are many trucks that look like small army vehicles. There are numerous four-door jeeps. Buses are everywhere — some electric trolley type; many are articulated in the middle. There are a few rare large limousines. There are a moderate number of four-door sedans that look like 1955 Plymouths. The streets are varied with some paved, some gravel, mostly two-laned but occasionally there are four lanes.

The Chinese tourist agency tries to give its visitors a truly varied picture of China. Of course, it is not a representative sample — it is



an interesting sample of north and south China with free picture taking and free note takings. Political indoctrination is not attempted except most obliquely — which is good, as Americans do not endorse either communistic or socialistic governments. As one would expect in commune visiting, visitors probably see only the best. Our group saw a farm commune whose irrigated crops looked excellent without much commercial fertilizer; the surprise was that the commune also had small manufacturing plants and a complete self-contained welfare state. Trademen on this commune retired at 60 years; some professionals, as physicians, retired at 55 years; women retired at 55 years.

In areas, China is dotted with industries, many of which are run by women. Our group did not see heavy industries although they obviously exist in moderate numbers. Instead, we saw plants that cut jade, made exquisite fans, grew silk worms on mulberry trees, performed marvelous embroidery, etc. Working conditions were good in the areas which we saw — and probably throughout China. In such discussions, the question of manual labor always arises. It is still present. We did not see humans pulled in rickshaws; we did see men straining to pull carts filled with loads of vegetables, rocks for street repair, and such. Road work was done by large groups of workers, both men and women, rather than by modern machinery. Field work was mostly human with men and women hand-picking cotton for example. Machinery exists but in small numbers. Loads are carried on the conventional pole with a basket at each end. The jobs seem to be getting done in their way.

Art lovers can have a field day in China. The most remarkable new finding is in the northern city of Sian just opened to outsiders. Here archeologists have found a tomb with thousands of life-sized terra cotta men and horses in almost a battle order. Each man has a different dress and face. Over the digging is a large aircraft style hanger. Of some interest is the appearance of Sian, which is like many other old cities. No grass. Few sidewalks, heavy truck traffic, heavy bicycle traffic, and a maze of small, open shops, each teeming with people. Of special interest art-wise is the number of pagodas and small buildings in an excellent state of preservation. They are often painted in bright red colors and embellished with numerous small paintings of

various mythical objects like dragons. One pagoda leans more than Pisa's famous tower. The temples and courtrooms are filled with furniture and trappings that are ornate and Chinese to even the most untrained observer — they look similar to modern pieces although they are hundreds of years old. Such buildings of great beauty and antiquity are to be found throughout the Chinese cities that our group visited. There is a lively replica trade for small objects being developed.

Chinese medicine is an admixture of old and new. There are "barefoot doctors" well known to our public; they deliver medical care akin to our nurse practitioners. Less well known are that the city and country communes have trained physicians who operate dispensaries somewhat like the out-patient departments of our hospitals. In several of these, acupuncture was being practiced. The patients seen by me while undergoing this procedure professed no pain from the needle; they further stated that their skeletal pains were being relieved. It was common to see three or four patients in a dispensary setting or lying taking acupuncture. Of most interest was a visit to Shanghai General Hospital No. 6. In 1961, this hospital pioneered re-implantation of severed limbs. Dr. Pao, the assistant head of the orthopedic department, showed me a series of illustrated case studies and then a movie on limb re-implantation. We then visited his wards and saw three patients in various stages of recovery from re-implantation surgery. Later, he brought in some recovered patients who had returned to work; they seemed remarkably recovered as to function although some obvious deformity persisted. Of particular interest were several cases in which second toes were grafted to arm stumps successfully enough to produce apposition. The hospital was clean, bare, and the patients appeared well tended.

No visit to China would be complete without recording some impression of the Chinese people. This writer was impressed with a number of things. First of all, the Americans better discard the long-ingrained foolishness that color of the skin and visage are reliable guides to intelligence and character; if this foolishness currently persists, the scope and complexity of the Chinese civilization will rapidly dispel any myth of Oriental intellectual deficits compared to Occidentals be it art, mechanical, physical, etc. Of great

interest to Americans are several traits of the Chinese civilization. Firstly, they seemed to be disciplined people — not in a governmental sense. Secondly, one senses a strong family unity and respect still obtained. Thirdly, there appears to be great interest in educating the children; they seem to stress equality and self-expression; group participation in little plays and exercises are stressed.

None of the above implies any endorsement of understanding of the Chinese government or for that matter any real knowledge of the Chinese government. Our group had no contact with the Chinese government as such. Furthermore, our group was on a proscribed tour. We traveled as a group. In cities, we were free to come and go as we pleased. Photography was freely permitted. All questions were answered although the responses were somewhat doctrinaire.

The undeniable conclusion from a superficial

trip to China is that the lot of the poorer Chinese must be much improved and that education for the masses is being pushed. The standard of creature comforts are low by our standards, but they are improving — new very plain worker living quarters are under construction in many areas.

The “bottom line” to Americans is how should we regard the Chinese as a people, as a culture, and as a political entity. This author is not qualified in the governmental area. With regard to the Chinese as a people, Americans should hold them in high regard. They are intelligent, industrious, multitudinous and disciplined. The Chinese people and the U. S. citizens could have a symbiosis that is mutually beneficial in many ways. Whatever the future holds, Americans should realize that the Chinese people could be potentially most formidable foes or potentially among the leaders in the fields of art and science — as well as a valuable political ally.



## MEDICINE IN THE



### THE MONTH IN WASHINGTON

After weeks of wrangling the House Commerce Committee late this month approved the Administration's hospital cost containment proposal by a 23-to-19 vote and thus removed all barriers to the appearance of the controversial bill for denial or acceptance before the full House.

The vote was preceded by a period of intense activity by friends and foes of the legislation in an effort to secure votes for their sides. As the committee deliberated on the measure, the White House pulled out all stops, cajoling and threatening lawmakers wavering and on the fence.

The Senate is marking time on the bill until the House acts. Both chambers are closely divided on the issue.

As approved by the Commerce Committee, the bill is tougher than a similar one approved earlier by the House Ways and Means Committee. However, all federal facilities, including Veterans Administration hospitals, would be exempted in the Commerce Committee version.

The measure is still a ghost of the plan submitted more than two years ago to immediately impose federal limits on hospital expenditure increase. The bill now triggers controls only if the Voluntary Effort fails to hold hospital increases under 11.6 percent a year. However, a major loophole exempts most hospital wage hikes from consideration—the price for labor union support.

Certain types of hospitals are exempt as are all



hospitals in states that have hospital regulatory programs. As a result, more than half of the nation's 6,000 hospitals would not be covered.

Earlier the Commerce Committee had adopted 23-17 an amendment by Rep. Edward Madigan (R-IL) to exempt from the program states that will have mandatory programs in effect by the first of the year. Illinois is such a state. Madigan previously had opposed the bill.

A move by Rep. James Broyhill (R-NC) to strip the bill of its mandatory features and set up a national commission to study the impact of a voluntary program was defeated on a tie vote.

Although the House Commerce subcommittee on Health had voted (8-4) against the bill, Chairman Henry Waxman (D-CA) later took it to the full committee—a rare maneuver—where he won a vote to accept the bill for consideration.

The Administration, which has made the bill its showpiece anti-inflation program, desperately wanted Commerce Committee approval, not only to rid the bill of damaging provisions contained in the Ways and Means measure, but for psychological purposes when the bill comes to the House floor. Rejection by a committee that shared jurisdiction over the bill would have been a strong argument against it.

The Administration banked heavily on both committees' approval even though the bill could have been brought to the full House in any event. Failure of the House Commerce Committee to adopt the bill, over which it shares jurisdiction with Ways and Means, would have seriously hurt its chances on the House floor.

President Carter, stung by charges he has been ineffective in dealing with Congress and wary of Sen. Edward Kennedy's (D-MA) presidential ambitions, got tough with the Commerce Committee. He apparently succeeded in switching several votes.

The Senate Finance Committee early in the summer had voted against the bill, but the Senate Labor and Human Resources Committee, under Kennedy pressure, had approved it.

\* \* \* \*

Sen. Kennedy and Rep. Henry Waxman have introduced the sweeping national health insurance plan they and organized labor want Congress to adopt. Fifty-eight House members lined up

with Waxman on the bill; seven Senators joined Kennedy.

Kennedy made clear that the breach between his forces and the Administration on national health remains unbridged. President Carter's plan is "unacceptable," Kennedy told the Senate.

"I hope now that the debate can begin in earnest," said Kennedy. "This can still be the National Health Insurance (NHI) Congress."

Waxman said in a speech to the House that "our bill will benefit the doctor and the consumer by assuring that medical treatment is based entirely on sound medical practice, not on one's ability to pay for needed treatment."

Kennedy revealed last May the outline of the new plan drafted by his staff and organized labor experts. More than a year ago, the Senator and his labor cohorts broke with the President on NHI, chiefly because Carter wanted Congress to implement a NHI program in stages, whereas Kennedy thinks Congress should approve everything right away.

One of the reasons former HEW Secretary Joseph Califano was reportedly fired from the Cabinet was his attempt to reach an accommodation with Kennedy on NHI, a detente that apparently neither side wishes at this time.

The Kennedy-Labor bill sets forth an ambitious national scheme combining private and federally-financed insurance with rigid budget controls. Cost is estimated at well over \$30 billion annually, by far the most expensive NHI plan before Congress.

Borrowing a leaf from President Nixon's NHI plan, Kennedy would mandate employers to provide comprehensive insurance for workers. The government would pick up the tab for the aged and the poor. Prospective budgeting for hospitals and negotiated fee schedules for physicians would be the principal cost control features. A national health budget would be set.

Senators backing the Kennedy plan at introduction were Harrison Williams (D-NJ), Alan Cranston (D-CA), Jacob Javits (R-NY), Howard Metzenbaum (D-OH), Claiborne Pell (D-RI), Donald Riegle (D-MI), and Lowell Weicker (R-CT). All except Weicker are members of the Senate Human Resources Committee, home of Kennedy's Health Subcommittee.

"Sen. Kennedy's bill is remarkable in a number of ways," the AMA commented.

"In the era of destructive inflation, he would add billions to the nation's health care costs.

"In an era when Federal regulation is regarded as an impediment to economic and personal freedom, he would add new layers of health care regulations.

"In an era when the demand for health care is growing, he would subject the nation to the possibility of health care rationing.

"Sen. Kennedy's program, while it gives the appearance of being based on the private sector, would reduce insurance companies to little more than administrators of the plan. Furthermore, his plan ignores the current realities of the U. S. economy and the long-range forecasts of continuing inflation and would impose an additional \$30 billion burden on the nation.

"The AMA will continue to support an expansion of adequate basic and catastrophic insurance through private sector programs."

\* \* \* \*

Shortly after Kennedy's NHI bill introduction President Carter sent Congress his "National Health Plan" calling for employers to provide comprehensive insurance for workers and establishing a "Healthcare" umbrella plan for the aged, disabled, poor, unemployed and anyone who can't get private health insurance.

The bill was introduced in the Senate by Sen. Abraham Ribicoff (D-CT), and in the House by Reps. Harley Staggers (D-WV), Chairman of the House Commerce Committee; Charles Rangel (D-NY), Chairman of the House Ways and Means subcommittee on Health; and James Corman (D-CA), a member of the Ways and Means Committee.

The Administration's bill is the last of the major national health insurance (NHI) measures to be introduced, trailing two weeks behind introduction of Sen. Edward Kennedy's NHI bill and about a year later than originally promised.

Carter said he was "determined" to secure action on NHI, implying that he could supply better leadership on the issue than Kennedy, his unofficial threat for the presidential nomination.

But the odds seem stacked against this Congress

acting on a large, expensive NHI plan. Only an alliance with the Kennedy forces would appear to give the Administration bill even a remote chance, and Carter made it clear he is in no mood to bridge his NHI difference with Kennedy and his labor backers.

The Administration plan provides for NHI to be implemented in stages by Congress, eventually reaching a universal comprehensive program. By contrast, the Kennedy bill would have Congress enact the entire package at once. This is the major difference between the two bills.

The first phase plan submitted by the President would take effect starting in 1983. Cost was estimated at \$18.2 billion to the federal government and \$6.1 billion in the private sector.

The bill mandates employers to provide coverage for all full-time workers and their families. Catastrophic coverage would apply after the first \$2,500 in expense. Employers would have to pay at least 75 percent of the premium costs.

Required benefits are similar to those under Medicare, but broader. Unlimited hospital inpatient and physician services would be furnished. Complete prenatal and delivery care for mothers, one year of infant care and preventive services for children through age 18 would be provided.

Medicare and Medicaid would be lumped into a broad, new federal health insurance program called "Healthcare". People unable to obtain private insurance at reasonable costs could purchase the Healthcare insurance. This plan would be financed with Social Security money, general revenues and state government funds. Medicare and Medicaid benefits would become identical, but the two programs' operations financing would remain essentially the same.

Hospitals would be reimbursed along the lines of the Administration's Hospital Cost Containment plan. Physicians under Healthcare would have to agree to a fee schedule as full payment. The schedule would not be mandatory for the private system, but "advisory."

\* \* \* \*

The same day the President introduced his NHI plan he questioned Sen. Edward Kennedy's political leadership. Engaging in the first skirmish with the Massachusetts Senator in their battle for the Democratic Presidential nomination.



tion, Carter said that despite Kennedy's long time commitment to NHI he has failed to get such legislation out of his Senate Health subcommittee.

At a New York City town meeting, the President also said he has maintained a steady hand in dealing with national and international crises. "I don't think I panicked in a crisis," he said. The remarks were interpreted by reporters as an indirect reference to the Chappaquiddick incident in which a young woman was killed in a car driven by Kennedy. The White House denied such intention.

Carter's NHI charge was somewhat off the mark. Kennedy has had the votes to move his NHI plans out of his subcommittee and probably out of the full Senate Labor and Human Resources Committee. He hasn't made the attempt because the plan would have stood no chance before the full Senate.

\* \* \* \*

The Federal Trade Commission's (FTC) controversial forays into the medical field have come under strong attack in Congress and in the Courts.

Spurred by business and professional antagonism toward the FTC, a House appropriations subcommittee has approved a money cut halting FTC's so-called consumer protection investigations and two major anti-trust investigations. Sen. James McClure (R-ID), has introduced an amendment that would exempt professional associations from the scope of the anti-trust laws. Support is building in the Senate for a Congressional veto power over FTC decisions.

The FTC case before the U. S. Court of Appeals in Washington, D. C. concerns its trade regulation rule lifting all professional and state restrictions on the advertising of eyeglasses and ophthalmic services. One provision requires that consumers be provided with copies of their prescriptions after eye examinations.

Appealing the rule to the Court was the American Optometric Association, nine states, and the American Medical Association. The chief thrust of the complaint by the lawyers, including Newton Minow, counsel for the American Medical Association, was that the FTC was improperly preempting state laws and that the agency does not have statutory authority to move against non-profit associations.

Minow a few days later testified before the

Senate Commerce subcommittee on Consumer Affairs which had launched a week of hearings on the FTC and complaints about it. He told the Senators that the AMA agrees that misleading advertising should be considered unlawful. The AMA also agrees that consumers should be provided copies of their eyeglass prescriptions, Minow said.

But, Minow continued, "the FTC should not be allowed to override the decisions of the duly elected representatives of the people of each state as to what laws are in the best interest of the people of that state" and the FTC should not be permitted "to prevent professionals—in this case, physicians—from voluntarily associating together to speak out against false or deceptive advertising which harms the patient."

"We are witnessing an unprecedented effort by a federal agency to redefine the fundamental relationships of our system of government. The FTC, already cloaked with exceedingly broad powers, is now asserting the authority to set aside any state law it doesn't like," Minow declared.

\* \* \* \*

The Professional Standards Review Organization (PSRO) program, in deep trouble a couple of years ago because of questions about its effectiveness, is showing signs of becoming a vigorous and established part of medical review process.

Congress has recently taken an "oversight" look at the status of the program. Although many of the comments before the Senate Finance subcommittee on Health were complaints about the way the program is handled by the government, most of the testimony was favorable and optimistic.

Subcommittee Chairman Herman Talmadge (D-GA), said that if the government, hospitals and the medical profession give PSROs their full support there would be no need for such a proposal as the Administration's controversial Hospital Cost Containment bill.

\* \* \* \*

The House Ways and Means Health subcommittee has approved the Administration's proposal to reimburse Health Maintenance Organizations (HMOs) under Medicare on a prospective basis at 95 percent of the "adjusted average per capita cost"—the amount the government estimates would be paid for services of fee-for-service providers in the geographical area.

If enacted, the proposal would substantially boost HMO revenues for Medicare patients, since the average HMO cost for covered services now is about 80 percent of the community rate. The proposal contemplates provision of services for the aged by HMOs that are not covered under the regular Medicare program.

The AMA immediately protested that the upshot would be to "establish two classes of benefits to be offered Medicare beneficiaries."

If Congress believes that particular services such as preventive health measures are cost effective and have particular beneficial value, "we believe that other beneficiaries should not be excluded from reimbursement," the AMA told the subcommittee. "We cannot support a bill that would establish two levels of care to Medicare beneficiaries."

\* \* \* \*

Patricia Harris told representatives of the medical profession she's beginning her tenure as Secretary of HEW "in a spirit of openness to dialogue, eagerness to listen."

At a dinner attended by leaders of the AMA and other groups, Harris said "our point of view cannot always coincide. But I think it is a sign of health in our democracy that we can meet and speak candidly to one another.

"If I have any mission tonight," Harris said, "it is to assure you that I am open to such a dialogue. You will sometimes find me in disagreement with you—but I hope you will never find me doctrinaire or closed to debate."

### COUNCIL MINUTES October 7, 1979

The Council of the Arkansas Medical Society met at 12:00 noon on Sunday, October 7, 1979, in the Camelot Inn, Little Rock. Members of the Council present were Burge, Andrews, Kutait, Shuffield, Osborne, Crow, P. Bell, Hestir, Irwin, Jameson, Harris, McCrary, Jones, Henry, Williams, Wilkins, Phillips, Ellis, and Saltzman. Others present were Robert Young, Thomas Bruce, George Mitchell, Bob Benafield, Purcell Smith, Bob Banister, Austin Grimes, Mr. Warren, Mr. Cearley, Mr. Mitchell, Mr. LaMastus, C. C. Long, and Miss Richmond.

The Council transacted business as follows:

1. George Mitchell reported on the results of the

survey made by Blue Cross-Blue Shield pertaining to proposed changes in the group plan for Society members. The Council took no actions to change the plan but requested information from Blue Cross-Blue Shield on the feasibility of offering a group plan for physicians, physicians' employees, and their families.

2. Austin Grimes reported to the Council on problems encountered in fulfilling the charge to the Private Insurance Review Committee which he chairs. Upon motion of McCrary, the Council voted to abolish the Private Insurance Review Committee.
3. President Andrews reported on the trip by Society representatives to Washington to visit with members of Congress from Arkansas. It was the consensus of those making the trip that it had been worthwhile and that the Society should give consideration to making such a visitation on an annual basis.
4. Mike Mitchell reported on a conference he attended in Denver for organization of the association of medical society legal counsel.
5. Purcell Smith reported on an invitation from the Southwestern states to join their caucus group at AMA conventions. Upon motion of Williams, the Council voted to continue the present arrangements of meeting with the Mid-America group.
6. Chairman Burge discussed the request from the American Medical Association for comments on the proposed change in the Principles of Medical Ethics and received Council concurrence in the appointment of an ad hoc committee to study the matter and make recommendations to the Council.
7. Upon motion of McCrary, the Council voted to reject advertising proposed for the Society Journal by the Little Rock Pregnancy Counseling Service because it felt that the advertising could be distasteful to a substantial number of the membership.
8. Chairman Burge presented a proposal from the Reorganizational Study Committee as follows:  
"The number of councilors be based on two councilors for each of the present ten districts with 200 or less members. For each additional



100 members, the district will be entitled to one additional councilor."

Upon the motion of Williams, the Council voted to accept without recommendation the proposal from the committee and to refer it to the House of Delegates.

9. Chairman Burge recognized Dr. Robert Young, Director of the State Health Department. Dr. Young advised the Council that the Department had discontinued the Cancer Registry and that the Department would host a national conference on rural primary care in March 1980. He also discussed the Department's application for a Rural Health Development grant.

#### Executive Session

1. Upon motion of Wilkins, the Council approved the following report of actions of the Executive Committee:

The Executive Committee met by conference call on August 9th and selected the following individuals to go to Washington for the visits with our Congressional Delegation: Drs. A. E. Andrews, Wayne Workman, Donald Duncan, Kenneth Duzan, Mahlon Maris, Asa Crow, John Bell, C. C. Long and Miss Richmond. (Note: Drs. Workman and Bell were unable to participate; Dr. Jim Citty of Searcy was later designated to replace Dr. Bell.)

The Executive Committee met on August 22nd prior to the MSRC meeting and took the following actions:

1. Reviewed a sample case file submitted by a private insurance company requesting peer review on appropriateness of treatment. The Executive Committee approved a one-year trial period of utilizing physician consultants of the Arkansas PSRO in making recommendations on such requests for peer review.
2. Voted to recommend Dr. Howard Schwan-

der, Dr. James Walt or Dr. Charles Fielder for appointment by the State Health Planning and Development Agency to a criteria committee for ambulatory surgery.

3. Received a suggestion that the Society consider selection of a physician for outstanding achievement and voted to take no action inasmuch as the Council had recently declined to single out an individual physician for recognition.

The Executive Committee met again by conference telephone on September 4th and reviewed the grant application for a rural health development program as proposed by the State Health Department. It was voted to write the Department of HEW a letter opposing the proposed plan. The Executive Committee also requested that individual physician members of the boards of the Health Systems Agencies be asked to bring the Medical Society's objection to the proposal to the attention of the HSA boards.

Following the report of official actions, members of the Executive Committee discussed further the Health Department's application for the Rural Health Development grant. Upon motion of Crow, the Council voted to send a letter to Dr. Young over the signature of the Chairman and furnish a copy to Governor Clinton. The letter is to acknowledge remarks made by Dr. Young to the Council, reiterate the Society's interest in improving health care for the people in rural areas of the State, and to express opposition to the proposed rural health development program and the position of the Health Department Director toward implementation of the program.

2. Dr. Long advised the Council of developments concerning a data consortium proposed by the Health Department.

The Council adjourned at 3:10 P.M.

APPROVED: John P. Burge, M.D.

Chairman of the Council



# keeping up

## Category 1 Continuing Medical Education Programs Available in Arkansas

### **TREATMENT OF ACUTE PULMONARY DISEASE**

Presented by William L. Mason, M.D., 12:00 Noon, January 15, 1980, St. Joseph's Mercy Medical Center, Hot Springs. One hour Category I credit. No registration fee.

### **NEWER DIAGNOSTIC TECHNIQUES IN SPINAL PROBLEMS**

Richard J. Nasca, M.D., Program Director, 9:00 A.M. to 4:30 P.M., January 19th, 1980, Room E-155, St. Vincent Infirmary, Little Rock. Six

hours Category I credit. Registration fee \$20 (includes lunch).

### **PRACTICAL PEDIATRIC RADIOLOGY FOR THE GENERAL RADIOLOGIST**

Presented by Joanna Seibert, M.D., 8:00 A.M. to 5:00 P.M., February 9-10, 1980, Hilton Inn, Little Rock. Sponsored by the University of Arkansas for Medical Sciences. Ten hours Category I credit. Registration fee to be announced.

### **RECURRING EDUCATION PROGRAMS**

Unless otherwise indicated, programs are for one to one and one-half hours Category I credit.

#### **EL DORADO**

*Pathology Conference*, second Tuesday each month, 12:00 Noon. Associated Pathologists' Laboratory. Sponsored by AHEC-El Dorado.

*Chest Conference*, alternate Wednesdays, 12:00 Noon, Warner-Brown Hospital. Sponsored by AHEC-El Dorado.

#### **FAYETTEVILLE—VA MEDICAL CENTER**

*Radiology Conference*, first and third Thursday, 1:00 P.M.

*Pathology Conference*, second Tuesday, 1:30 P.M.

*Mortality Conference*, second Thursday, 3:00 P.M.

*Gastroenterology Conference*, January (check for day and time).

*Hematology Conference*, February (check for day and time).

#### **HOT SPRINGS—ST. JOSEPH'S MERCY MEDICAL CENTER**

*Arkansas State Health Department Regional Chest Conference*, second and fourth Tuesday.

#### **JONESBORO—ST. BERNARD'S REGIONAL MEDICAL CENTER**

*Medical Lecture Series*, first, second, fourth, and fifth Friday, 11:50 A.M. Sponsored by AHEC-NE.

*Interesting Cases*, second and fourth Tuesday, 11:50 A.M. Sponsored by AHEC-NE.

*Tumor Conference*, third Tuesday, 11:50 A.M. Sponsored by AHEC-NE.

*Chest Conference*, third Friday, 11:50 A.M. Sponsored by AHEC-NE.

#### **LITTLE ROCK—BAPTIST MEDICAL CENTER**

*Pulmonary Care Conference*, each Tuesday, 12:00 Noon to 1:00 P.M. Dining Room #4.

*Central Arkansas Primary Care Conference*, second Tuesday, 7:00 P.M. to 9:00 P.M., Auditorium. Two hours Category I credit. A meal is provided.

*Cardiopulmonary Resuscitation Course*, second Wednesday, 6:00 P.M. to 12:00 P.M. Human Resource Development Area. Six hours Category I credit. A meal is provided.

*Morbidity and Mortality Conference*, first Thursday, 8:00 A.M. to 9:00 A.M., Conference Room #1.

*Surgery Conference*, each Thursday except first Thursday, 8:00 A.M. to 9:00 A.M., Conference Room #1.

#### **LITTLE ROCK—ST. VINCENT INFIRMARY**

*Interhospital GI Problems Conference*, first Monday, 6:00 P.M., Room E155 Education Wing.

*Peripheral Vascular Disease Conference*, second Monday, 6:00 P.M., Room E155 Education Wing.

*Interhospital Urology Grand Rounds*, first Tuesday, 5:30 P.M., Room E159 Education Wing.

*Neuropathology Conference*, third Tuesday, 5:00 P.M., Room SH169, Laboratory.

*Pulmonary Conference*, first and third Thursday, 12:00 Noon, Room E159 Education Wing.

*Cleft Palate Conference*, February 20, 1980, 12:30 P.M., Room E159 Education Wing.

#### **LITTLE ROCK—UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES**

*Internal Medicine Grand Rounds*, each Thursday, 8:00 A.M. to 9:00 A.M., Education I Auditorium.

#### **POCAHONTAS**

*Monthly Lecture Series*, January 15, 1980, 7:30 P.M. Sponsored by AHEC-NE.

#### **WALNUT RIDGE**

*Monthly Lecture Series*, February 19, 1980, 7:30 P.M. Sponsored by AHEC-NE.

As organizations accredited for continuing medical education by the Liaison Committee on Continuing Medical Education, the organizations named certify that these continuing medical education activities meet the criteria for the credit hours specified in Category I of the Physician's Recognition Award of the American Medical Association.





## PERSONAL AND NEWS ITEMS

### Physicians Named To ABFP

Dr. Oliver C. Raney of Pine Bluff, Dr. Ted Eugene Ashcraft of Russellville, and Dr. David C. Garrett, III, of Rogers have been named diplomates of the American Board of Family Practice.

### Dr. Les Anderson Speaks

Dr. Les Anderson of Lonoke was the featured speaker at the seventh annual Lonoke County Council on Human Resources banquet.

### Physician Appointed to SMA

Dr. L. K. Austin of Monticello has been appointed Councilor-Elect from Arkansas by the Southern Medical Association.

### Physician Named New Hospital Staff Chief

Dr. Jack Wilson was elected Chief of Staff at the meeting of the Baxter General Hospital staff. Dr. Wilson has been practicing family medicine in the Mountain Home Medical Group. He will succeed Dr. J. Y. Massey of Mountain Home.

### Hospital Honors Dr. Viner

Dr. Donald Viner of Benton was named the outstanding member of the Ten Year Club of Saline Memorial Hospital for 1979 at the annual banquet of the hospital staff members and auxiliary.

### Physicians Named Fellow to the AAFP

Drs. Judson Hout of Camden and C. R. Cole of Blytheville have been named Fellows of the American Academy of Family Physicians.

### Dr. Hales Locates

Dr. Robert Hales has begun practice in Corning. He is associated with the Kneibert Clinic located in the Huddle Plaza Shopping Center in Corning.

### Dr. Rankin Announces Associate

Dr. J. D. Rankin of Hamburg announces the association of Dr. Charles Hicks in general family practice. Dr. Hicks relocated from Monticello to join Dr. Rankin in practice.

### Physician Locates

Dr. Stephen Blackburn is practicing at 421

South 7th Street in Heber Springs. Dr. Blackburn is a general practitioner.

### Physician Receives Honor

Dr. John McCollough Smith of Little Rock has been elected to receive the 33rd Degree of the Scottish Rite Masonry.

### Drs. Pappas and Gay Speak

Drs. James J. Pappas and Ellery C. Gay, Jr. of Little Rock, presented an instructional course entitled "Outpatient Surgery in Otolaryngology" at the October meeting of the American Academy of Otolaryngology in Dallas. This is the second consecutive year that the physicians have been asked to present their instructional course.

### Physician Named Runner-Up for Award

Dr. George W. Warren of Smackover was one of the runners-up for the 1979 Family Doctor of the Year selected by Good Housekeeping and the American Academy of Family Physicians. This award is given for dedication in serving the local community by maintaining the highest quality medical care. Dr. Warren serves as a physician for 17 local companies, as a medical director for two nursing homes and as an athletic physician for five schools.

### Physician Locates

Dr. James P. Bell has set up practice at 608 Hickory in Mena specializing in Internal Medicine.

### Physician Wins Award

Dr. W. Payton Kolb of Little Rock received the first Meritorious Service Award presented by the Arkansas Psychiatric Society during that Society's annual scientific conference at Fairfield Bay in October.

### Dr. Asad Locates

Dr. Younis Asad has begun practice at the Booneville and Charleston Medical Clinics. Dr. Asad came to Arkansas from California.

### Physician Named Chief of Hospital

Dr. Earnest Saunders of Manila was elected

chief of staff for the Manila Community Hospital. Dr. Kim Saito was elected vice-chairman and Dr. Pak Chan was elected secretary.

#### **Physicians Named Fellows**

Drs. Arturo P. Venturina of Huntington and Joe Stallings of Jonesboro have been named Fellows of the American Academy of Family Physicians.

Dr. Paul Wills of Fort Smith has become a Fellow of the American College of Surgeons.

#### **Dr. Gardner Honored with Homecoming Celebration**

Dr. Hoyt D. Gardner, president of the American Medical Association, was honored with a homecoming celebration in Paragould. Dr. Gardner, who was born in Paragould and raised in Cardwell, Missouri, was received by about 100 area doctors and their wives at the reception held at the Paragould Country Club. During the re-

ception Dr. Gardner was presented with the Key to the City.

#### **Physician Speaks to YMCA**

Dr. James R. McNair of Little Rock presented a program on preventive medicine to the Downtown Little Rock YMCA in November.

#### **Physicians Locate**

Dr. Terry Green, a native of DeWitt, has begun orthopedic surgery practice at 910 East Race Street in Searcy.

Dr. Shlomo Friedman has begun practice in West Helena specializing in Pediatrics.

Dr. Salimi Wirjosemito has begun practice in Surgery at the Corning Community Hospital. Dr. Wirjosemito is a native of Indonesia.

#### **Drs. Jennings and Jansen Named Diplomats**

Dr. Larry B. Jennings of Marshall and Dr. Andrew Jansen of Pocahontas have been named diplomates of the American Board of Family Practice.



## **NEW MEMBERS**

The Union County Medical Society has added three new members to their roll. They are:

#### **Dr. Raymond N. Bowman**

Dr. Bowman was born in Alabama and was graduated in 1968 from Samford University with a B.S. degree. He received his M.D. degree in 1972 from the University of Alabama School of Medicine in Birmingham. Dr. Bowman interned at Vanderbilt University Medical Center and took residency training in Urology at Ochsner Clinic

in New Orleans. He served in the United States Army from 1974 to 1976.

Dr. Bowman is specializing in Urology at 619 North Newton in El Dorado.

#### **Dr. Carlos E. Gray**

Dr. Gray was born in Lima, Peru. He was graduated in 1965 with a B.S. degree from the University of San Marcos in Peru. Dr. Gray interned at West Virginia University Medical Center and completed residency training in internal medicine at the same institution. Dr. Gray practiced in Morgantown, West Virginia, for one year.

Dr. Gray is in Internal Medicine practice at 490 West Faulkner in El Dorado.

#### **Dr. David B. Fraser**

Dr. Fraser was a native of Houston, Texas. He was graduated in 1948 from the University of Texas in Austin with a B.A. degree and received his M.D. degree in 1952 from the University of Texas Medical Branch in Galveston. Dr. Fraser received his internship at the Memorial Hospital in Corpus Christi and was in family practice in Corpus Christi from 1953 to 1965. He received



residency training in Psychiatry with the Veterans Administration from 1965 to 1968. He continued with the Veterans Administration and in 1971 became associated with the South Arkansas Regional Health Center. He is full-time Medical Director at the South Arkansas Regional Health Center. Dr. Fraser served one year in the United States Navy Reserves.

Dr. Fraser is certified by the American Board of Psychiatry and Neurology and is a member of the American Psychiatric Association. He is associate professor of Psychiatry at the University of Arkansas College of Medicine in Little Rock and is chief of psychiatry service at the Arkansas Health Education Center in El Dorado.

Dr. Fraser practices Psychiatry at the South Arkansas Regional Health Center in El Dorado.

The Sebastian County Medical Society has added two active members to its roll. They are:

## Dr. Steve Edmondson

Dr. Edmondson is a native of Little Rock. He attended the University of Arkansas and received his M.D. degree in 1975 from the University of Arkansas School of Medicine in Little Rock. Dr. Edmondson interned at the University of Arkansas Medical Center, and received his residency training in Internal Medicine at the same institution.

Dr. Edmondson is certified by the American Board of Internal Medicine. He is an associated member of the American College of Physicians.

Dr. Edmondson practices Internal Medicine at 1500 Dodson in Fort Smith.

## Dr. Robert C. Miller

Dr. Miller was born in Neillsville, Wisconsin. He was graduated from the University of Wisconsin in Madison, with a B.S. degree in 1961, and received his M.D. degree from the University of Wisconsin Medical School in Madison in 1964. Dr. Miller interned at DeGoesbriant Memorial Hospital in Burlington, Vermont. He had one year of Internal Medicine residency at the University of Wisconsin Hospital and then completed a Radiology residency at the same institution.

Dr. Miller was an assistant professor in Radiology at the University of Wisconsin in Madison from July 1971 to January 1973. From January to August 1973, he practiced in Tomahawk, Wisconsin. He was assistant professor of Radiology,

Radiation Oncology Division, at the Arizona Health Sciences Center in Tucson from August 1973 to June 1977. From July 1977 to August 1978, Dr. Miller was Associate Professor of Radiology and Clinical Director, Radiation Oncology Division, of the Arizona Health Sciences Center in Tucson.

Dr. Miller was certified by the American Board of Radiology in 1972. He is a member of the American Society of Therapeutic Radiologists, American Society of Clinical Oncology, Radiation Research Society and the American College of Radiology.

Dr. Miller specializes in Radiation Oncology at 1500 Dodson in Fort Smith.

Pulaski County has announced the addition of four new members to their medical society:

## Dr. Carroll Edward Corbell

Dr. Corbell was born in Mineral Springs, Arkansas, and was graduated from the University of Arkansas in Fayetteville in 1962 with a BSCE and a MSCE degree. Dr. Corbell received his M.D. degree at the University of Arkansas School of Medicine in Little Rock in 1974. His internship was at St. Vincent Infirmary and his residency in general surgery was at Louisiana State University in Shreveport.

Dr. Corbell is in general surgery practice located at 500 South University, Suite 505, in Little Rock.

## Dr. Jorge F. Jimenez

Dr. Jimenez was born in Potosi, Bolivia, and received his B.S. degree in 1964 from the University Tomas Frias in Potosi. He was graduated from the University Boliviana San Simon, Cochabamba, Bolivia, with a M.D. degree in 1971. Dr. Jimenez interned at the Baptist Memorial Hospital in Jacksonville, Florida. His residencies were at the Baptist Memorial Hospital in Pathology from December 1973 to July 1974 and from the University of Cincinnati in Ohio in Pathology from July 1974 to December 1976.

Dr. Jimenez is certified by the American Board of Pathology. He is a member of the American Society of Clinical Pathologist and the College of American Pathologists. Dr. Jimenez is assistant professor of Pathology and Pediatrics at the University of Arkansas for Medical Sciences.

Dr. Jimenez is specializing in Pediatric Pathology at 804 Wolfe Street in Little Rock.

**Dr. John P. Shock**

Dr. Shock was born in Webster Springs, West Virginia. He was graduated from the United States Military Academy at West Point in 1959 with a B.S. degree, and was graduated from Duke University School of Medicine in Durham, North Carolina, in 1966. Dr. Shock interned at Walter Reed Hospital in the District of Columbia and his residency in Ophthalmology was also at Walter Reed Army Medical Center.

Dr. Shock is certified by the American Board of Ophthalmology. He was on the faculty of the University of California in San Francisco from 1972 to 1976 and the University of Texas in San Antonio from 1976 to 1979.

Dr. Shock is Professor and Chairman of the Department of Ophthalmology at the University of Arkansas School of Medicine.

**Dr. Charles D. Sullivan**

Dr. Sullivan was born in Bremerton, Washington. He attended high school in Greenville, Mississippi, and was graduated from the University of Arkansas in Fayetteville in 1968 with a B.S. degree. His M.D. degree was received in 1972 from the University of Arkansas School of Medicine in Little Rock. Dr. Sullivan interned at the University of Arkansas College of Medicine and took his residency training at the University of Arkansas in Little Rock in Pathology. He received a fellowship at the M. D. Anderson Tumor Institution in Houston, Texas, in Pathology.

Dr. Sullivan is certified by the American Board of Pathology. He is associated with Pathology

Labs of Arkansas at the Baptist Medical Center in Little Rock.

\* \* \* \*

The Pulaski County Medical Society has also added four new courtesy members to its roll:

**Mr. Anthony D. Johnson**

Anthony D. Johnson is a native of Cherokee Village, Arkansas. He received his B.S. degree from the Arkansas State University and is a senior medical student at the University of Arkansas College of Medicine in Little Rock.

**Dr. Phyllis E. Stansell**

Dr. Stansell was born in McAllen, Texas, and received a B.S. degree from Baylor University. Dr. Stansell was graduated from the Texas Tech University School of Medicine in Lubbock in 1977 and is a Pediatrics resident at the University of Arkansas College of Medicine.

**Dr. Warren A. Skaug**

Dr. Skaug was born in Marquette, Michigan. He was a graduate from the University of Arkansas in 1977. Dr. Skaug is a Pediatrics resident at the University of Arkansas College of Medicine in Little Rock.

**Dr. Edward A. Gresham**

Dr. Gresham is a native of Crossett. He attended Hendrix College where he received his B.A. degree. Dr. Gresham was graduated from the University of Arkansas College of Medicine in 1979. He is an intern in family practice at the University of Arkansas College of Medicine in Little Rock.



**OBITUARY**

**Dr. William L. Fulton**

Dr. William L. Fulton of North Little Rock died October 24, 1979. He was born August 17, 1917, in Patterson, Louisiana. Dr. Fulton had been in Family Practice in North Little Rock for over thirty years.

Dr. Fulton attended Hendrix College and was graduated from the University of Arkansas School of Medicine in 1942. He held the rank of Major while practicing medicine with the United States Army Air Corps during World War II. Dr. Fulton served as the first chief of staff at the Memorial Hospital in North Little Rock. He was active in the "Mended Hearts" program.

Dr. Fulton is survived by his wife, Mrs. Ida Roberts Fulton, one son and one daughter.

**Dr. Wesley Mage Honeycutt**

Dr. Wesley M. Honeycutt of Little Rock died November 1, 1979. He was born January 15, 1931,



in Nashville, Arkansas.

Dr. Honeycutt attended Nashville Schools and the University of Arkansas in Fayetteville. He received his medical degree from the University of Arkansas College of Medicine in 1956 and completed his internship at the same institution. After serving two years in the United States Navy, Dr. Honeycutt completed his residency training at the University of Michigan in Ann Arbor. He was a member of the American Dermatology Association and a member and former president

of the Arkansas Dermatological Society.

Dr. Honeycutt had been clinical professor of Dermatology at the University of Arkansas since 1962. He was also on the teaching staff of the American Academy of Dermatology. He was author of more than fifty articles for scientific publications. He was recognized nationally for his research related to skin cancer and fungus infections.

Dr. Honeycutt is survived by his wife, Janet Toney Honeycutt, one daughter and one son.



# THINGS TO COME

## APRIL 1980

The Annual Session of the Arkansas Medical Society will be held April 20-23, 1980, at the Arlington Hotel in Hot Springs. The Program theme will be "Recent Advances in Oncology".

## NOVEMBER 1980

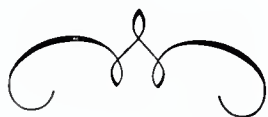
The Southern Medical Association will hold its 74th Annual Scientific Assembly in San Antonio, November 15-18, 1980.



# **ARKANSAS MEDICAL SOCIETY**

## **MEMBERSHIP ROSTER**

### **December 1, 1979**



**HEADQUARTERS OFFICE:**  
**214 NORTH 12TH STREET**  
**POST OFFICE BOX 1208**  
**FORT SMITH, ARKANSAS 72902**  
**TELEPHONE: 501 782-8218**





# MEMBERSHIP ROSTER OF THE ARKANSAS MEDICAL SOCIETY 1979-1980

Type of Practice	Member's Name	Address	Telephone Number
<b>ARKANSAS COUNTY</b>			
FP	Cross, Joseph E.	Post Office Box 472, DeWitt 72042	946-1676
FP	Daniel, N. B.	Route 1, Box 21-D, Stuttgart 72160	673-7211
FP	Guyer, G. L.	Route 1, Box 21-D, Stuttgart 72160	673-7311
FP	Hestir, John M.	Post Office Drawer 512, DeWitt 72042	946-3637
FP	John, Milton C., Jr.	Route 1, Box 21-D, Stuttgart 72160	673-7211
GP	Le, Minh Quang	Post Office Box 530, Des Arc 72040	256-4154
GS	Millar, Paul H.	Route 1, Box 21-D, Stuttgart 72160	673-7211
FP	Morgan, Jerry D.	Route 1, Box 21-D, Stuttgart 72160	673-7211
GP	McCracken, Elbert A.	509 South Main, Stuttgart 72160	673-7211
GP	Nguyen, Van M.	Post Office Box 530, Des Arc 72040	673-8571
FP	Northcutt, Carl E.	Route 1, Box 21-D, Stuttgart 72160	256-4154
FP	Pritchard, Jack L.	1022 South Main, Stuttgart 72160	673-7211
GP	Rasco, C. W., Jr.	111 South Jackson, DeWitt 72042	673-2331
FP	Speer, Hoy B., Jr.	1814 North Henderson, Stuttgart 72160	946-3156
R	Speer, Marolyn N.	Route 1, Box 21-C, Stuttgart 72160	673-2586
GP	Van Duyn, Thomas S.	Post Office Box 110, Stuttgart 72160	673-3511
			673-7291
<b>ASHLEY COUNTY</b>			
FP	Allison, David B.	Freeland Professional Bldg., Star City 71667	628-5137
FP	Bui, Thieu	Post Office Box 248, Wilmet 71676	473-2274
FP	Cothorn, William R.	Post Office Box 577, Crossett 71635	364-6111
FP	Cutcher, Solomon	Address Unknown	
	Edwards, Lawrence E.	Shalimar, Florida	
GP	Garcia, Luis F.	Post Office Box 792, Crossett 71635	364-4181
	Mask, Don L.	Alexander City, Alabama	
GP	Rankin, James D., Jr.	Post Office Box 232, Hamburg 71646	853-8271
FP	Ripley, C. E.	317 North Alabama, Crossett 71635	364-5113
GP	Salb, Robert L.	113 Pine, Crossett 71635	364-2138
GP	Thompson, Barry V.	310 North Alabama, Crossett 71635	364-5746
FP	Toon, D. L.	315 North Alabama, Crossett 71635	364-8062
<b>BAXTER COUNTY</b>			
GS	Abraham, K. Simon	Green Valley Drive, Mountain Home 72653	425-6991
GP	Arnold, Carl B.	Post Office Box 457, Salem 72576	895-3281
GP	Beard, Arthur L.	126 West Sixth, Mountain Home 72653	425-3131
PS	Beckman, James S.	Post Office Box 276, Mountain Home 72653	425-5232
GP	Benton, Thomas H.	Post Office Box 547, Salem 72576	895-3215
FP	Bozeman, Jim G.	Highway 9 North, Salem 72576	895-2541
EM	Brian, Francis M., Jr.	Baxter General Hospital, Mountain Home 72653	425-3141
GP	Burnett, Richard L.	126 West Sixth, Mountain Home 72653	425-3131
IM	Cheney, Maxwell G.	Post Office Box 725, Mountain Home 72653	425-3125
AN	Clarke, James S.	7th and Shiras, Mountain Home 72653	425-9484
R	DeLany, Clarence L.	Post Office Box 939, Salem 72576	895-3124
PTH	Douglas, Donald S.	#14 Medical Plaza, Mountain Home 72653	425-8411
GP	Ducker, David E.	Post Office Box 367, Salem 72576	895-3215
FP	Dunbar, James C.	Post Office Box 410, Mountain Home 72653	425-2020
FP	Eans, Thomas L.	126 West Sixth, Mountain Home 72653	425-3131
R	Fontenot, Edwin, Jr.	Route 2, Box 57-A, Mountain Home 72653 (Res.)	425-7337
GS	Ford, William H.	402 East Sixth, Mountain Home 72653	425-9120
GP	Gotaas, Bernice	Post Office Box 44, Bull Shoals 72619	445-4755
GS	Grasse, A. Meryl	Post Office Box 438, Calico Rock 72519	297-3726
GP	Guenther, John F.	126 West Sixth, Mountain Home 72653	425-3131
D	Hardin, Philip R.	Post Office Box 142, Mountain Home 72653	425-9737
GS	Hawkins, Michael L.	Post Office Box 349, Mountain Home 72653	425-6988
GP	Kelley, Lawrence A.	Post Office Box 356, Bull Shoals 72619	445-4292
FP	Kerr, Robert L.	Post Office Box 706, Mountain Home 72653	425-6971
OPH	Massey, J. Y.	Post Office Drawer H, Mountain Home 72653	425-6026
OPH	McGaughey, Allen S.	Post Office Drawer H, Mountain Home 72653	425-6026
FP	Moody Michael N.	Highway 9 North, Salem 72576	895-2541
GP	Penly, Don H.	402 West Market, Horseshoe Bend 72512	670-5145
PTH	Peterson, Hubert C.	#14 Medical Plaza, Mountain Home 72653	425-8411
OPH	Sneed, John W., Jr.	Post Office Drawer H, Mountain Home 72653	425-6026
ORS	Sward, David T.	920 South Baker, Mountain Home 72653	425-9293
R	Tullis, Joe M.	Post Office Box 373, Mountain Home 72653	425-2398
IM	Turner, Frederick C.	Post Office Box 333, Mountain Home 72653	425-4967
GP	Wilbur, Paul F.	Post Office Box 706, Mountain Home 72653	425-6971
FP	Wilson, Jack C.	353 East 8th, Mountain Home 72653	425-3125
R	Wilson, M. Carolyn	Post Office Box 373, Mountain Home 72653	425-2797
<b>BENTON COUNTY</b>			
PD	Allen, L. Barry	1114 Poplar Place, Rogers 72756	636-9234
FP	Arkins, James H.	Post Office Box 420, Bentonville 72712	273-9056
P	Ball, Eugene H.	Route 2, Box 53, Rogers 72756	636-8307
GS	Bledsoe, James H.	1223 West Walnut, Rogers 72756	636-5411
OPH	Boozman, Fay W., III	Post Office Box 1353, Rogers 72756	636-7506
D	Carter, Vernon H.	101 South 12th, Rogers 72756	636-0599
GP	Clower, John D.	Post Office Box 737, Rogers 72756	636-2711
FP	Cohagan, Donald L.	408 Northwest "I", Bentonville 72712	273-5543
RD	Compton, Neil E.	Post Office Box 209, Bentonville 72712 (Res.)	273-5123
R	Cooper, Edward M.	Bella Vista Community Hospital, Bella Vista 72712	855-3736
GS	Costaldi, Mario E.	Post Office Box 737, Rogers 72756	636-2711
R	Davies, Dale H.	13 Britten Circle, Bella Vista 72712	855-9477
PTH	Denman, David A.	Rogers Memorial Hospital, Rogers 72756	636-0200
IM	Donnell, Robert W.	Post Office Box 737, Rogers 72756	636-2711
OBG	Elkins, James P.	1116 Poplar Place, Rogers 72756	636-0300
FP	Floyd, Louis C.	5 Professional Drive, Bella Vista 72712	855-3781
GP	Garrett, John L.	Post Office Box 369, Gravette 72736	787-5221
GP	Hall, Billy V.	Post Office Box 369, Gravette 72736	787-5221
PD	Harmon, Harry M.	1114 Poplar Place, Rogers 72756	636-9234
FP	Hitt, Jerry L.	Post Office Box 737, Rogers 72756	636-2711
OPH	Hof, C. William	Post Office Box 1197, Rogers 72756	636-0238
FP	Holder, Robert E.	Post Office Box 420, Bentonville 72712	273-9056
AN	Horne, Glennon A.	601 West Walnut, Rogers 72756	636-3840
FP	Howard, Willard H., Jr.	Post Office Box 30, Bentonville 72712	273-5551
P	Hull, Robert R.	1301 West Persimmon, Rogers 72756	636-7004
FP	Humiston, Karl E.	Post Office Box 228, Sulphur Springs 72768	298-3304
GS	Huskings, John A.	Post Office Box 737, Rogers 72756	636-2711
GS	Jennings, William E.	817 Summit Drive, Rogers 72756 (Res.)	636-3122
ORS	Kendrick, Carl M.	1227 West Walnut, Rogers 72756	636-9607



Type of Practice	Member's Name	Address	Telephone Number
		Rogers Memorial Hospital, Rogers 72756	636-0200, Ext. 264
R	Knapp, James R.	Post Office Box 1000, Rogers 72756	636-6551
IM	Miles, Richard W.	Post Office Box 127, Decatur 72722	752-3233
FP	McCollum, E. N.	Post Office Box 1567, Rogers 72756	636-3627
GE	McKnight, William D.	Post Office Box 737, Rogers 72756	636-2711
FP	Neaville, Gary A.	1223 West Walnut, Rogers 72756	636-5411
GS	Pearson, Richard N.	2212 West Walnut, Rogers 72756 (Res.)	636-2862
RD	Pickens, James L.	Post Office Drawer "I", Gravette 72736	787-5291, Ext. 215
R	Platt, Michael R.	1110 West Elm, Rogers 72756	636-0110
OTO	Reese, Michael C.	122 See Street, Rogers 72756 (Res.)	925-1506
GP	Robbins, Robert H.	408 Northwest "I", Bentonville 72712	273-2497
FP	Rollow, John A.	5 Professional Drive, Bella Vista 72712	855-3781
GP	Ronald, Douglas C.	Post Office Box 27, Pea Ridge 72751	451-1174
FP	Russell, Homer B.	1219 West Walnut, Rogers 72756	636-6881
FP	Stone, W. Tex.	Rogers Memorial Hospital, Rogers 72756	636-0200
R	Swaim, T. J.	1217 West Walnut, Rogers 72756	636-9669
U	Turley, Jan Thomas	Post Office Box 737, Rogers 72756	636-2711
GP	Warren, Grier D.	Post Office Box 368, Decatur 72722	752-3233
FP	Webb, William F.		

#### BOONE COUNTY

GS	Bell, Thomas E.	Post Office Box 1116, Harrison 72601	741-6418
R	Bennett, Joe D.	651 North Spring, Harrison 72601	365-9667
P	Butts, Donald R.	Post Office Box 1214, Harrison 72601	741-3915
OTO	Chambers, Carlton L.	8ower at Pine, Harrison 72601	741-7684
PD	Chambers, Sue R.	Post Office Box E, Marshall 72650	448-3327
FP	Daniel, Charles D.	707 North Vine, Harrison 72601	741-9481
U	Ferguson, Noel F.	217 West Stephenson, Harrison 72601	365-8651
GP	Fowler, Ross E.	Post Office Box 1077, Harrison 72601	741-3459
IM	Garland, William J., Jr.	Post Office Box 1118, Harrison 72601	741-8275
GS	Gladden, Jean C.	Post Office Box 288, Eureka Springs 72632	253-8070
GP	Green, Jess D., Jr.	Post Office Box 1116, Harrison 72601	741-7411
GS	Hoberock, Thomas R.	Hudsonaker's Jasper 72641 (Res.)	446-2948
TS	Hudson, William A.	424 South Willow, Harrison 72601 (Res.)	743-1134
RD	Jackson, Ulys.	651 North Spring, Harrison 72601	741-5022
GP	Kirby, Henry V.	651 North Spring, Harrison 72601	741-9492
OPH	Kuharich, Richard M.	520 North Spring, Harrison 72601	741-8286
FP	Langston, R. H.	224 West Erie, Harrison 72601	741-8289
ORS	Ledbetter, Charles A.	Post Office Box 1241, Harrison 72601	741-7334
OBG	Mahoney, Paul L., Jr.	Post Office Box 759, Harrison 72601	741-8247
FP	Maris, Mahlon O.	124 East Church, Berryville 72616	423-2806
FP	Poynor, Charles M.	Post Office Box 728, Harrison 72601	429-2763
IM	Robinson, G. Allen	651 North Spring, Harrison 72601	741-6373
GP	Scroggins, Sam J.	620 North Spring, Harrison 72601	741-2441
OBG	Simpson, Thomas J.	Post Office Box 1077, Harrison 72601	741-3459
IM	Smith, H. Van	224 West Erie, Harrison 72601	741-8289
ORS	Vowell, Don R.	Post Office Drawer AA, Green Forest 72638	438-5218
FP	Wallace, Oliver	302 Rice, Berryville 72616	423-3338
ORS	Williams, Ralph E.	Post Office Box 1118, Harrison 72601	741-8275
GS	Williams, Rhys A.	520 North Spring, Harrison 72601	741-8286
FP	Wilson, Joe B.		

#### BRADLEY COUNTY

GP	Crow, Merl T., Jr.	205-207 East Church, Warren 71671	226-5811
FP	Marsh, James W.	302 North Main, Warren 71671	226-2112
FP	Whaley, William C., Jr.	203 East Church, Warren 71671	226-5811
FP	Wynne, George F.	113 West Cypress, Warren 71671	226-2844

#### CHICOT COUNTY

GP	Burge, John H.	Lake Village Clinic, Lake Village 71653	265-5343
GS	Burge, John P.	Lake Village Clinic, Lake Village 71653	265-5343
IM	Ponrartana, Prasart.	Post Office Box 512, Lake Village 71653	265-5374
PD	Ponrartana, Saowaree	Post Office Box 512, Lake Village 71653	265-5374
GP	Russell, John R.	Lake Village Clinic, Lake Village 71653	265-5343
IM	Sinlar, P.	2420 North Highway 65, Eudora 71640	355-4496
GP	Smith, Major E.	Post Office Box 310, Dermott 71638	538-5717
GP	Talbot, Allen G.	Lake Village Clinic, Lake Village 71653	265-5343
GP	Thomas, H. W.	Post Office Box 250, Dermott 71638	538-5255
GP	Tvedten, Tom	Lake Village Clinic, Lake Village 71653	265-5345
GP	Weaver, William J.	Post Office Box Q, Eudora 71640	355-4376
GP	Wilson, Thomas C.	117 East Peddicord, Dermott 71638	538-5253

#### CLARK COUNTY

RD	Anderson, P. R.	Post Office Box 758, Arkadelphia 71923 (Res.)	246-4464
FP	Bay, John W.	416 Main, Arkadelphia 71923	246-2431
GS	Blackmon, James T.	1008 Pine, Arkadelphia 71923	246-6734
RD	Clark, Charles G.	1108 Huddleston, Arkadelphia 71923 (Res.)	246-4493
FP	Gary, Eli	Post Office Box 475, Arkadelphia 71923	246-2491
PH	Kennedy, Jack W.	Fifth and Clay, Arkadelphia 71923	246-4471
FP	Luck, Herman D.	Route 1, Box 25, Arkadelphia 71923	246-2471
FP	Mann, R. Jerry	416 Main, Arkadelphia 71923	246-2431
FP	McGrew, Gary L.	107 North 3rd, Gurdon 71743	353-2504
P	Parsons, Earl	117 North 11th, Arkadelphia 71923	246-8364
GP	Peeples, George R.	305 East Main, Gurdon 71743	353-4222
FP	Ritchie, Lois A.	3004 West Pine, Arkadelphia 71923	246-2471
GP	Ritter, N. R.	3004 West Pine, Arkadelphia 71923	246-2471
RD	Toombs, Vernon L.	101 Charlotte, Gurdon 71743 (Res.)	353-2935

#### CLEBURNE COUNTY

OPH	Baldrige, Max	Post Office Box 431, Heber Springs 72543	362-3479
RD	Barnett, James C.	Front Street, Heber Springs 72543 (Res.)	362-2786
GP	Barnett, Michael E.	Fourth and Spring, Heber Springs 72543	362-3143
FP	Cranford, Harrol L.	105 North Sixth, Heber Springs 72543	362-8296
FP	Hinkle, Richard A.	Post Office Box 128, Quitman 72131	589-2600
GP	McClanahan, Donald H.	401 West Searcy, Heber Springs 72543	362-2414
GP	Poff, Joseph H.	401 West Searcy, Heber Springs 72543	362-2414
GP	Poff, Nathan L.	401 West Searcy, Heber Springs 72543	362-2414
R	Scruggs, Joe B.	Post Office Box 510, Heber Springs 72543	362-3121
IM	Sharp, Jack V.	Post Office Box 70, Heber Springs 72543	362-3316
FP	Wells, W. M.	300 East Roosevelt Road, Little Rock 72206	372-8361

Type of Practice	Member's Name	Address	Telephone Number
<b>COLUMBIA COUNTY</b>			
FP	Alexander, John E.	707 North Washington, Magnolia 71753	234-2288
FP	Farmer, John M.	104 East Columbia, Magnolia 71753	234-2230
FP	Griffin, Rodney L.	123 North Jackson, Magnolia 71753	234-3040
R	Hunter, Robert W., Jr.	2602 Crestview, Magnolia 71753 (Res.)	234-6117
GP	Jones, Thomas H.	Post Office Box 387, Waldo 71770 (Res.)	693-5634
FP	Kelley, Charles W.	1327 North Washington, Magnolia 71753	234-5544
GS	McMahan, H. Scott	Post Office Box 647, Magnolia 71753	234-3340
FP	Pullig, Thomas A.	805 North Jackson, Magnolia 71753	234-8570
FP	Roberts, Franklin D.	123 North Jackson, Magnolia 71753	234-3040
GP	Ruff, John L.	104 Hospital Road, Magnolia 71753	234-2144
GS	Rushton, Joe F.	219 North Washington, Magnolia 71753	234-1168
GP	Strange, Vance M.	Post Office Box 67, Stamps 71860	533-2438
FP	Walker, Jack T.	123 North Jackson, Magnolia 71753	234-3040
FP	Weber, Charles H.	110 West North, Magnolia 71753	234-4411
RD	Wilson, John H.	904 Lawton Circle, Magnolia 71753 (Res.)	234-1545
<b>CONWAY COUNTY</b>			
FP	Buchanan, Thomas L.	200 South Moose, Morrilton 72110	354-4637
FP	Evans, Clifford L.	6924 Geyer Springs Road, Little Rock 72202	562-1463
GP	Hickey, Thomas H.	Post Office Box 230, Morrilton 72110	354-4624
GP	Hyatt, Benjamin C.	Post Office Box 265, Perryville 72126	889-5141
GP	Lipsmeyer, Keith M.	Post Office Box 677, Morrilton 72110	354-2456
GP	Owens, Gastor B.	Post Office Box 536, Morrilton 72110	354-4505
PTH	Rozzell, Allen R.	601 South Moose, Morrilton 72110	354-1225
FP	Wells, Charles F.	601 South Moose, Morrilton 72110	354-2123
GP	White, H. B.	Post Office Box 230, Morrilton 72110	354-4623
<b>CRAIGHEAD-POINSETT COUNTY</b>			
D	Alston, Herman D.	816 Cobb, Jonesboro 72401	932-4570
R	Aston, J. Kenneth	3024 Young Road, Jonesboro 72401	972-7260
IM	Baldrige, John A.	3100 Apache Drive, Jonesboro 72401	972-1710
OBG	Basinger, James W.	Post Office Box 1478, Jonesboro 72401	935-3990
OBG	Berry, Donald M.	Post Office Box 1478, Jonesboro 72401	935-3990
OBG	Blair, Richard A.	505 East Matthews, Jonesboro 72401	935-3990
P	Blaylock, Jerry D.	301 South Church, Jonesboro 72401	935-0360
U	Bogaev, Leonard R.	812 Cobb, Jonesboro 72401	932-2926
R	Buckner, John H.	828 Cobb, Jonesboro 72401	932-7458
IM	Burns, Richard G.	505 East Matthews, Jonesboro 72401	932-1198
IM	Clopton, Owen H., Jr.	505 East Matthews, Jonesboro 72401	932-1198
HEM	Cohen, Robert S.	223 East Jackson, Jonesboro 72401	972-0063
GP	Cole, Gary B.	Craighead Memorial Hospital, Jonesboro 72401	972-7000
GP	Craig, Gus A.	920 Union, Jonesboro 72401	932-3022
FP	Crawley, Michael E.	3100 Apache Drive, Jonesboro 72401	972-1720
ORS	Dickson, Glenn E.	505 East Matthews, Jonesboro 72401	932-1820
GS	Drake, James E.	Post Office Box 51, Jonesboro 72401	972-1960
OTO	Eddington, William R.	505 East Matthews, Jonesboro 72401	935-8132
ORS	Edwards, Harvey O.	924 South Main, Jonesboro 72401	972-0110
GS	Faris, John C.	907 Union, Jonesboro 72401	935-8470
FP	Forestiere, A. J.	Post Office Box 106, Harrisburg 72432	578-5443
R	Garner, William L.	224 East Matthews, Jonesboro 72401	932-7458
OTO	Gossett, Clarence E.	505 East Matthews, Jonesboro 72401	935-8132
R	Green, W. Robert	828 Cobb, Jonesboro 72401	932-0639
IM	Guinn, Donald R.	505 East Matthews, Jonesboro 72401	932-1198
P	Guthrie, Alastair N.	2701 South Caraway Road, Jonesboro 72401	932-0692
IM	Hall, Ray H.	311 East Matthews, Jonesboro 72401	935-4150
GP	Harper, T. P.	Post Office Box C, Monette 72447	486-2131
GP	Hogue, Ernest L.	505 East Matthews, Jonesboro 72401	932-8121
R	Holland, James A.	Post Office Box 1124 Jonesboro 72401	932-7458
FP	James, Frank M.	3100 Apache Drive, Jonesboro 72401	972-5500
AN	Johnson, Larry H.	818 Cobb, Jonesboro 72401	932-4211
PD	Johnson, Roehl W.	505 East Matthews, Jonesboro 72401	935-6012
GE	Jones, R. J.	Whiteman AFB, Missouri	935-4150
GS	Jordan, Harry J.	311 East Matthews, Jonesboro 72401	932-4581
PD	Keisker, Henry W.	505 East Matthews, Jonesboro 72401	935-6012
PD	Kemp, Charles E.	505 East Matthews, Jonesboro 72401	972-6450
GYN	Kirkley, John B.	Post Office Box 1458, Jonesboro 72401	932-7430
PTH	Kroe, Donald J.	411 East Matthews, Jonesboro 72401	972-0550
FP	Lawrence, Robert O.	417 East Matthews, Jonesboro 72401	935-5454
FP	Ledbetter, Joseph W.	804 South Church, Jonesboro 72401	935-4150
NEP	Mackey, Michael	311 East Matthews, Jonesboro 72401	935-9123
ORS	Mahon, Larry E.	810 Jeter Drive, Jonesboro 72401	932-4211
AN	Mitchell, George E.	818 Cobb, Jonesboro 72401	932-0980
FP	Modelevsky, Aaron C.	Post Office Box 1427, Jonesboro 72401	935-1390
FP	Moffat, James W.	3100 Apache Drive, Jonesboro 72401	935-6396
=	McCurry, John H.	St. Louis, Missouri	972-4288
OPH	McKee, Bobby E.	505 East Matthews, Jonesboro 72401	972-4288
EM	Neff, Michael D.	224 East Matthews, Jonesboro 72401	932-1181
EM	Peeler, Malcolm O.	224 East Matthews, Jonesboro 72401	932-2634
GP	Plunk, Hermie G.	5005 East Nettleton, Jonesboro 72401	972-0290
GP	Poole, Grover D.	Post Office Box 10, Jonesboro 72401	935-6012
P	Price, Edwin F.	Post Office Box 5033, Jonesboro 72401	935-5529
PD	Rainwater, W. T.	505 East Matthews, Jonesboro 72401	972-6740
FP	Raney, Bascom P.	403 East Matthews, Jonesboro 72401	237-4396
OBG	Reid, E. Paul	3100 Apache Drive, Jonesboro 72401	932-2423
FP	Robbins, Robert A.	208 Cobean Boulevard, Box 8, Lake City 72437	935-4755
D	Robinette, James M.	801 Osler Drive, Jonesboro 72401	972-1960
GS	Rogers, James F.	505 East Matthews, Jonesboro 72401	935-3990
OBG	Rusher, Albert H., Jr.	Post Office Box 51, Jonesboro 72401	932-4875
GS	St. Clair, John T., Jr.	505 East Matthews, Jonesboro 72401	972-8032
NS	Sanders, James W.	505 East Matthews, Jonesboro 72401	972-8040
ORS	Sapiro, Gary S.	223 East Jackson, Jonesboro 72401	932-2926
U	Schantz, James L.	830 Cobb, Jonesboro 72401	972-1720
FP	Scriber, Ladd J.	812 Cobb, Jonesboro 72401	932-2450
RD	Sears, Glenn	3100 Apache Drive Jonesboro 72401	972-1640
ORS	Shanlever, R. C.	1103 Wilkins, Jonesboro 72401 (Res.)	972-4288
EM	Shanlever, William T.	806 Jeter Drive, Jonesboro 72401	483-6411
GP	Shepherd, W. F.	225 East Matthews, Jonesboro 72401	358-2811
GP	Smith, Floyd A., Jr.	415 West Main, Trumann 72472	932-4211
AN	Smith, Vestal B.	Post Office Box 614, Marked Tree 72365	932-7430
PTH	Sparks, E. Barrett	318 Cobb, Jonesboro 72401	972-0550
FP	Stainton, R. M., Jr.	411 East Matthews, Jonesboro 72401	
FP	Stallings, Joe H., Jr.	417 East Matthews, Jonesboro 72401	



Type of Practice	Member's Name	Address	Telephone Number
#	Stroud, Paul T.	Jonesboro	358-2036
FP	Swingle, Charles G.	Post Office Box 267, Marked Tree 72365	972-1570
GP	Taylor, G. Wayne	211 East Matthews, Jonesboro 72401	935-4150
IM	Taylor, Robert D.	311 East Matthews, Jonesboro 72401	972-1810
FP	Tedder, Michael E.	3100 Apache Drive, Jonesboro 72401	935-8510
FP	Thomas, James F.	Southgate Plaza, Jonesboro 72401	932-8221
OPH	Utley, Phillip M.	920 South Main, Jonesboro 72401	578-5446
FP	Verser, Joe	Post Office Box 106, Harrisburg 72432	932-7430
PTH	Vollman, Don B., Jr.	411 East Matthews, Jonesboro 72401	932-8221
OPH	Webb, James W.	920 South Main, Jonesboro 72401	932-2926
U	Williams, E. Walden	812 Cobb, Jonesboro 72401	932-1987
GS	Wilson, Francis M.	505 East Matthews, Jonesboro 72401	932-7430
PTH	Wilson, Joseph T., Jr.	411 East Matthews, Jonesboro 72401	935-4824
FP	Winters, W. Lee	2113 Indian Trails, Jonesboro 72401 (Res.)	932-8121
GP	Wisdom, G. Durwood	505 East Matthews, Jonesboro 72401	932-2423
FP	Young, Samuel M.	801 Osler Drive, Jonesboro 72401	
<b>CRAWFORD COUNTY</b>			
		Post Office Box 664, Van Buren 72956	474-5061
IM	Crowley, Kevin P.	Post Office Box 623, Van Buren 72956	474-2336
FP	Darden, L. R.	1103 Chestnut, Van Buren 72956	474-2361
GP	Edds, Millard C.	Post Office Box 664, Van Buren 72956	474-5061
IM	Edwards, Henry N.	Post Office Box 664, Van Buren 72956	474-1340
FP	Hopkins, Ed G.	Route 2, Box 332, Van Buren 72956 (Res.)	632-3855
GP	Sasser, Louis G., III	Post Office Box 478, Alma 72921	474-9539
GP	Shearer, F. E.	Post Office Box 458, Alma 72921	474-6832
GP	Stone, Kenneth I.	Post Office Box 359, Van Buren 72956	474-6832
GP	Stone, Marcia	Post Office Box 359, Van Buren 72956	
<b>CRITTENDEN COUNTY</b>			
PD	Adwell, C. Edward	228 Tyler, West Memphis 72301	735-0833
IM	Aertker, Roger C.	228 Tyler, West Memphis 72301	735-0836
GYN	Arnold, Sidney W.	228 Tyler, West Memphis 72301	735-3842
GP	Croom, D. Wayne	Post Office Box 1596, West Memphis 72301	735-1170
GP	Deneke, Milton D.	Post Office Box 687, West Memphis 72301	735-0833
PD	Evans, Loraine J.	228 Tyler, West Memphis 72301	735-2150
OBG	Ferguson, T. Murray	200 South Rhodes, West Memphis 72301	735-2150
OBG	Ford, Robert C., Jr.	200 South Rhodes, West Memphis 72301	735-1170
FP	Hamilton, Ralph B.	300 South Rhodes, West Memphis 72301	735-0833
FD	Haynes, Max G.	228 Tyler, West Memphis 72301	735-6803
IM	Herring, William T.	228 Tyler, West Memphis 72301	735-4612
GS	Jay, Gilbert D., III	200 South Rhodes, West Memphis 72301	735-1500
AN	Kendrick, W. R.	200 Tyler, West Memphis 72301	735-7680
OPH	Kennedy, Keith B.	316 Tyler, West Memphis 72301	735-0833
FP	Klutzn, Joseph	228 Tyler, West Memphis 72301	735-3664
GS	Lanford, H. G.	308 South Rhodes, West Memphis 72301	735-3919
FP	Lubin, Milton	200 South Rhodes, West Memphis 72301	735-0833
IM	Murfin, Wesley W.	228 Tyler, West Memphis 72301	735-3919
FP	McGuire, Sam A., III	200 South Rhodes, West Memphis 72301	735-1973
IM	Peeples, Chester W., Jr.	228 Tyler, West Memphis 72301	901-362-1090
EM	Phillips, Stanley I.	2990 Getwell Road, Memphis, Tennessee 38118	735-3664
GS	Schoettle, Glenn P.	308 South Rhodes, West Memphis 72301	735-3945
FP	Shrader, Floyd R.	200 South Rhodes, West Memphis 72301	735-1170
GP	Smith, Bedford W.	300 South Rhodes, West Memphis 72301	735-2071
IM	Taylor, C. Herbert	228 Tyler, West Memphis 72301	735-1500, Ext. 218
R	Utley, L. Thomas	Post Office Box 248, West Memphis 72301	735-2150
OBG	Westbrook, H. Wade	200 South Rhodes, West Memphis 72301	735-0833
IM	Wolejko, Raymond E.	228 Tyler, West Memphis 72301	792-8956
FP	Wright, William J.	1605 2nd, Earle 72331	
<b>CROSS COUNTY</b>			
		Post Office Box 158, Wynne 72396	238-2321
GP	Beaton, K. E.	Post Office Box 158, Wynne 72396	238-2321
GP	Bethell, Robert D.	Post Office Box 158, Wynne 72396	238-2321
FP	Burks, Willard G.	Post Office Box 158, Wynne 72396	238-2321
GP	Crain, Vance J.	Post Office Box E, Wynne 72396	238-3261
GP	Hayes, Robert A.	Post Office Box E, Wynne 72396	238-3261
FP	Jacobs, James R.	Post Office Box E, Wynne 72396	238-3261
FP	Young, John H.	Post Office Box E, Wynne 72396	
<b>DALLAS COUNTY</b>			
		Post Office Box 351, Fordyce 71742	352-7117
FP	Delamore, John H.	2026 Parkwood Lane, Fordyce 71742 (Res.)	352-2488
FP	Dobson, Jack T.	Post Office Box 506, Fordyce 71742	352-3151
FP	Howard, Don G.	Post Office Box 506, Fordyce 71742	352-5144
FP	Nutt, Hugh A.	Post Office Box 36, Sparkman 71763	678-2406
GP	Taylor, George D.		
<b>DESHA COUNTY</b>			
		207 South Elm, Dumas 71639	382-4425
GP	Harris, Howard R.	145 West Waterman, Dumas 71639	382-4878
FP	Hoagland, Robert A.	207 South Elm, Dumas 71639	382-4425
GP	Money, William L., Jr.	Post Office Box 652, McGehee 71654	222-3141
GP	Moss, Swan B.	Post Office Box 707, McGehee 71654	222-6131
FP	Prosser, Robert L., III	207 South Elm, Dumas 71639	382-4425
FP	Robinson, Guy U.	101 South 3rd, McGehee 71654	222-4044
GP	Turney, Lonnie R.	Post Office Box 707, McGehee 71654	222-6131
FP	Young, James E.		
<b>DREW COUNTY</b>			
		711 H. L. Ross Drive, Monticello 71655	367-6832
PD	Austin, L. K.	203 East Trotter, Monticello 71655	367-3531
GP	Binns, Van C.	733 Roberts Drive, Monticello 71655	367-3246
FP	Busby, Arlee K.	750 H. L. Ross Drive, Monticello 71655	367-6231
FP	David, Andrew E.	416 South Main, Monticello 71655	367-6867
FP	Holder, James B., Jr.	232 South Main, Monticello 71655	367-2473
GP	Price, J. P.	Post Office Box 660, Monticello 71655	367-6867
FP	Wallick, Paul A.	Post Office Box 660, Monticello 71655	367-6868
FP	Wilson, Harold F.		
<b>FAULKNER COUNTY</b>			
		#9 Laurel Plaza, Conway 72032	329-6862
FP	Abrams, Joe A.	411 Western Avenue, Conway 72032 (Res.)	329-3412
RD	Archer, Charles A., Jr.	923 Parkway, Conway 72032	329-3824
FP	Banister, Bob G.	Post Office Box 404, Conway 72032	329-8742
AN	Beasley, Margaret D.	Post Office Box 1386, Conway 72032	329-2946
FP	Beasley, T. O.		

Type of Practice	Member's Name	Address	Telephone Number
ADM.	Benafield, Robert B.	Post Office Box 2181, Little Rock 72203	378-2131
GP	Daniel, Sam V.	574 Locust, Conway 72032	329-6111
FP	Dobbs, John C.	Post Office Box 1327, Conway 72032	329-2948
FP	Doss, John R.	Post Office Box 1386, Conway 72032	329-2946
IM	Furlow, William C.	Post Office Box 1367, Conway 72032	327-1325
OPH	Gardner, Dan R.	Post Office Box 1284, Conway 72032	327-4444
R	Garrison, James S.	Conway Memorial Hospital, Conway 72032	329-3831, Ext. 171
FP	Gordy, Fred, Jr.	552 Locust, Conway 72032	329-6881
OPH	Hendrickson, Richard	1504 Caldwell, Conway 72032	327-4444
OPH	Magie, J. J.	Post Office Box 1284, Conway 72032	327-4444
FP	Ross, Rex W.	Post Office Box 1327, Conway 72032	329-2948
FP	Sessions, Leslie H.	803 South Highway 65, Dumas 71639	382-2373
FP	Smith, John D.	923 Parkway, Conway 72032	329-3824
FRANKLIN COUNTY			
GP	Calaway, Robert L.	Post Office Box C, Mulberry 72947	997-1484
GP	Ewing, Jon R.	604 West Commercial, Ozark 72949	667-4111
GP	Ewing, Rebecca F.	604 West Commercial, Ozark 72949	667-4111
FP	Gibbons, David L.	Post Office Box 136, Ozark 72949	667-2285
ADM	Long, C. C.	Post Office Box 1208, Fort Smith 72902	782-8218
GARLAND COUNTY			
IM	Adams, Frank M.	236 Central, Hot Springs 71901	623-8751
IM	Arnold, W. O.	1002 Central Tower Building, Hot Springs 71901	624-1397
U	Aspell, Robert W.	304 St. Louis Place, Hot Springs 71901	321-9013
OTO	Atkinson, Robert H.	303 Central Tower Building, Hot Springs 71901	623-6101
R	Bohnen, Loren O.	901 West Grand, Hot Springs 71901	623-6693
IM	Bond, John B., Jr.	505 West Grand, Hot Springs 71901	624-5697
OTO	Borg, Robert V.	4409 Central, Hot Springs 71901	624-5422
OPH	Bracken, Ronald J.	505 West Grand, Hot Springs 71901	624-4478
GS	Brunner, John H.	101 Whittington, Hot Springs 71901	321-2229
U	Burrow, Thomas E.	903 West Grand, Hot Springs 71901	623-8110
RD	Burton, Frank M.	2300 Central, Hot Springs 71901 (Res.)	623-8323
U	Burton, James F.	101 Whittington, Hot Springs 71901	321-2229
D	Cates, Jack A.	99 Little Pine, Hot Springs 71901	624-0673
GS	Chamberlain, Joe W.	330 Sixth, Hot Springs 71901	623-4477
GS	Chamberlain, Warren W.	330 Sixth, Hot Springs 71901	623-4477
RHU	Clardy, E. K.	Post Office Box 850, Hot Springs 71901	623-9684
RD	Daniel, R. L.	125 Carl Drive, #58, Hot Springs 71901 (Res.)	623-9753
GP	Davis, James H.	Post Office Box 315, Mount Ida 71957	867-2175
IM	Dembinski, T. Henry	805 1/2 Central, Hot Springs 71901	623-9781
OPH	Dodson, John W., Jr.	505 West Grand, Hot Springs 71901	623-4541
ORS	Durham, Thomas M., Jr.	505 West Grand, Hot Springs 71901	623-7717
RD	Edwards, G. A.	1 Magda Lane, Hot Springs Village 71901 (Res.)	922-0552
GS	Eisele, W. Martin	101 Whittington, Hot Springs 71901	321-2229
R	Fore, Robert W.	901 West Grand, Hot Springs 71901	623-6693
IM	Fotioo, George J.	505 Central Tower Building, Hot Springs 71901	623-5121
GS	French, James H.	101 Whittington, Hot Springs 71901	321-2229
FP	Gardial, J. Richard	125 Greenwood, Hot Springs 71901	623-3373
FP	Gardner, James L.	125 Greenwood, Hot Springs 71901	623-0904
RD	Garner, Onyx P.	Post Office Box 428, Lake Hamilton 71951	525-8752
NS	Graham, Richard F.	505 West Grand, Hot Springs 71901	623-4391
OBG	Gupta, Surinder N.	606 Central Tower Building, Hot Springs 71901	321-1329
OTO	Haggard, John L.	101 Whittington, Hot Springs 71901	321-2229
RD	Harper, Edwin L.	4409 Central, Hot Springs 71901	624-5422
GS	Hebert, Gaston A.	802 Prospect, Hot Springs 71901 (Res.)	623-7216
FP	Hill, Robert L.	905 West Grand, Hot Springs 71901	623-9581
IM	Hollis, Thomas H.	125 Greenwood, Hot Springs 71901	623-3373
D	Hoyt, Jerry L.	328 Quapaw, Hot Springs 71901	624-4581
GYN	Irwin, William G.	Post Office Box 2588, Hot Springs 71901	321-9455
CD	Jackson, Haynes G.	Post Office Box 2067, Hot Springs 71901	623-6628
PTH	Jayaraman, K. K.	2513 Malvern Avenue, Hot Springs 71901	321-2513
OPH	Jayaraman, Vilasini D.	Post Office Box 1460, Hot Springs 71901	623-2518
GS	Johnston, Gaither C.	99 Little Pine, Hot Springs 71901	624-7106
GP	Kaler, Ron A.	905 West Grand, Hot Springs 71901	623-9581
OBG	Keadle, William R.	Post Office Box P, Glenwood 71943	356-3155
ORS	Kimberlin, G. Dan	101 Whittington, Hot Springs 71901	321-2229
RD	Kincheleo, Dale	211 Hobson Avenue, Hot Springs 71901	321-2663
AN	King, Leeman H.	610 Ramble, Hot Springs 71901 (Res.)	623-8185
#	Klugh, Walter G., Jr.	300 St. Louis Place, Hot Springs 71901	623-9216
FP	Klugh, Walter G., Sr.	Hot Springs	
PTH	Koehn, Martin A.	1705 Central Avenue, Hot Springs 71901	321-9292
P	Lee, W. R.	Post Office Box 1460, Hot Springs 71901	623-2518
GP	Lewis, Robert L.	Post Office Box 850, Hot Springs 71901	624-2354
IM	Lovell, Clarence R.	414 Albert Pike, Hot Springs 71901	624-1211
IM	Maruthur, Gopakumar	905 Central Tower Building, Hot Springs 71901	623-1545
GS	Mashburn, William R.	99 Little Pine, Hot Springs 71901	623-4453
R	Meek, Gary N.	905 West Grand, Hot Springs 71901	623-9581
ORS	Munos, Louis R.	901 West Grand, Hot Springs 71901	623-6693
ORS	Murray, DuBose	505 West Grand, Hot Springs 71901	623-7717
GYN	McConkie, Stuart B.	715 West Grand, Hot Springs 71901	623-5300
PD	McCrary, Robert F.	505 West Grand, Hot Springs 71901	321-2217
GP	McFarland, Louis R.	211 Hobson, Hot Springs 71901	321-1314
PD	McMahan, James C.	306 Albert Pike, Hot Springs 71901	624-2111
OBG	Newton, Doane M.	236 Woodbine, Hot Springs 71901	321-2546
GP	Pappas, Deno P.	101 Whittington, Hot Springs 71901	321-2229
GP	Parkerson, Carl R.	300 Woodbine, Hot Springs 71901	624-3379
IM	Parkerson, Cecil W.	1421 Central, Hot Springs 71901	624-3341
AN	Patterson, Ralph M.	236 Central, Hot Springs 71901	624-5567
GP	Peoples, Raymond E.	310 Park, Hot Springs 71901	624-3868
FP	Power, Allyn R.	236 Central, Hot Springs 71901	623-3102
OBG	Queen, George P.	125 Greenwood, Hot Springs 71901	623-3373
RD	Rainwater, W. S.	101 Whittington, Hot Springs 71901	321-2229
IM	Reed, Lon E.	1110 Prospect, Hot Springs 71901 (Res.)	623-5815
PD	Rogers, I. David	225 Linden, Hot Springs 71901	623-4343
GS	Rosenzweig, Joseph L.	Post Office Box 1358, Hot Springs 71901	624-4411
GP	Sammons, Vernon E., Jr.	905 West Grand, Hot Springs 71901	623-9581
GP	Sanders, Hallman E.	220 Bafanridge, Hot Springs 71901 (Res.)	624-2869
FP	Seifert, Kenneth A.	3 DeSoto Center, Hot Springs Village 71901	922-0540
R	Simpson, John B.	1705 Central, Hot Springs 71901	321-9292
R	Smith, Oliver A.	Houston, Texas	
	Springer, M. R., Jr.	901 West Grand, Hot Springs 71901	623-6693
	Springer, William Y.	901 West Grand, Hot Springs 71901	623-6693



Type of Practice	Member's Name	Address	Telephone Number
FP	Stecker, Elton H.	1315 Central, Hot Springs 71901	624-5206
FP	Stecker, Rheeta	1315 Central, Hot Springs 71901	624-5206
RD	Stough, D. B.	819 Prospect, Hot Springs 71901 (Res.)	623-4265
D	Stough, D. B., III	99 Little Pine, Hot Springs 71901	625-0673
OPH	Thomas, Al	Post Office Drawer D, Hot Springs 71901	624-1204
O&G	Thompson, Thomas P., Jr.	101 Whittington, Hot Springs 71901	321-2229
PD	Trieschmann, John W.	Post Office Box 2458, Hot Springs 71901	321-2546
RD	Wade, H. King, Jr.	118 Trivista, Right, Hot Springs 71901 (Res.)	623-9426
OPH	Wallace, Thomas R.	505 West Grand, Hot Springs 71901	624-0609
P	Watermann, Eugene	Post Office Box 1106, Hot Springs 71901	624-7111
<b>GRANT COUNTY</b>			
GP	Irvin, Jack M.	205 West High, Sheridan 72150	942-3171
#	Kelly, Miles F.	Sheridan	942-5155
FP	Paulk, Clyde D.	1000 West Vine, Sheridan 72150	
<b>GREENE-CLAY COUNTY</b>			
R	Baker, Augustus J.	Post Office Box 339, Paragould 72450	236-7733, Ext. 177
OT	Baker, Clark M.	115 West Court, Paragould 72450	236-6356
PTH	Boggs, Dwight F.	900 West Kingshighway, Paragould 72450	236-7733, Ext. 131
FP	Bonner, J. Darrell	1015 West Kingshighway, Paragould 72450	239-4076
FP	Collier, George H., Jr.	Post Office Box 361, Paragould 72450	236-8752
FP	Collier, Jon D.	Post Office Box 361, Paragould 72450	236-8752
GP	Crow, Asa A.	#1 Medical Drive, Paragould 72450	239-8504
FF	Duckworth, Hillard R.	425 West Jackson, Piggott 72454	598-2237
GP	Futrell, J. B.	414 West 2nd, Rector 72461	595-3332
OPH	Hardcastle, R. Lowell	#1 Medical Drive, Paragould 72450	236-6948
GP	Harper, Bland R.	Post Office Box 227, Monette 72447	486-2131
ORS	Hazzard, Marion F.	#1 Medical Drive, Paragould 72450	236-6996
FP	Hobby, George A.	#1 Medical Drive, Paragould 72450	239-8579
GS	Lawson, J. Larry	#1 Medical Drive, Paragould 72450	239-5916
AN	Martin, Richard O.	Post Office Box 339, Paragould 72450	236-7733, Ext. 194
GP	Mitchell, Bennie E.	901 West Kingshighway, Paragould 72450	239-8576
FP	Muse, Jerry L.	425 West Jackson, Piggott 72454	598-2237
RD	McKelvey, Earle D.	319 Grandview, Clarksville 72830 (Res.)	754-2382
GP	Page, B. C.	#1 Medical Drive, Paragould 72450	236-6930
GP	Price, Robert E.	130 South 14th, Paragould 72450	239-8549
R	Purcell, Donald I.	Post Office Box 339, Paragould 72450	239-8431
PTH	Richmond, Jack G.	Post Office Box 339, Paragould 72450	236-7733
GS	Sellars, John Robert	#1 Medical Drive, Paragould 72450	239-5926
FP	Shedd, Leonus L.	1015 West Kingshighway, Paragould 72450	239-4076
FP	Shotts, Mack	#1 Medical Drive, Paragould 72450	239-8505
PD	Shotts, Vern Ann	1015 West Kingshighway, Paragould 72450	239-4076
FP	Watson, Sam D.	901 West Kingshighway, Paragould 72450	236-8591
IM	White, Robert B.	#1 Medical Drive, Paragould 72450	239-9549
FP	Williams, Jacob M.	1015 West Kingshighway, Paragould 72450	239-4076
<b>HEMPSTEAD COUNTY</b>			
GP	Branch, James W., Sr.	426 South Main, Hope 71801	777-4636
FP	Harris, C. Lynn	Post Office Box 687, Hope 71801	777-2321
FP	Harris, Lowell O.	Post Office Box 550, Hope 71801	777-2131
FP	Holt, Forney G.	300 East Sixth, Texarkana 75501	774-3211
GS	Martindale, James G.	116 South Main, Hope 71801	777-3464
GP	McKenzie, Jim	Post Office Box 687, Hope 71801	777-2321
R	Stevens, David G.	Route 4, Box 238-S, Hope 71801	777-2323
FP	Wright, George H.	200 South Pine, Hope 71801	777-6722
<b>HOT SPRING COUNTY</b>			
GP	Brashears, Larry B.	1234 South Main, Malvern 72104	332-5245
FP	Clark, Curtis B.	#12 Driftwood Cove, Jackson, Tennessee 38301 (Res.)	901-668-1369
FP	Cobb, Russell W.	1420 Potts, Malvern 72104	332-3112
GP	Cole, John W.	725 East Page, Malvern 72104	332-5641
FP	Ellis, C. Randolph	1004 South Main, Malvern 72104	332-6941
GP	Kersh, Noah B.	151B McBee, Malvern 72104	337-7533
GP	McCray, Raymond V.	214 East Highland, Malvern 72104	332-2704
FP	Peters, Claude F.	1420 Potts, Malvern 72104	332-2521
FP	Vaughan, John A.	115 East Highland, Malvern 72104	332-2371
FP	White, Robert H.	1004 Dyer, Malvern 72104	332-3664
<b>HOWARD-PIKE COUNTY</b>			
GP	Chambers, W. H.	Post Office Box 1750, Nashville 71852	845-4041
FP	Dildy, Edwin V.	Route 5, Box 57-D, Nashville 71852 (Res.)	845-2772
GS	Hearnberger, John	Post Office Box 88, Nashville 71852	845-1761
GP	Jones, William J.	Post Office Box 49, Glenwood 71943	356-3921
FP	King, Joe D.	Post Office Box 549, Nashville 71852	845-1933
R	Leavelle, Ray W.	Post Office Box 381, Nashville 71852	845-4400
FP	Peebles, Samuel W.	120 West Sybert, Nashville 71852	845-4676
FP	Smith, U. Lee	Post Office Box 807, Nashville 71852	845-3880
GP	Turbeville, James O.	Post Office Box 434, Murfreesboro 7195B	285-2182
GP	Vu, Trong V.	Post Office Box 33, Dierks 71833	286-3154
GP	Ward, Hiram T.	Post Office Box 319, Murfreesboro 7195B	285-2491
FP	White, Phillip L.	Post Office Box 53B, Murfreesboro 7195B	285-3118
GP	Wilmoth, Marion H.	Post Office Box 804, Nashville 71852	845-4780
<b>INDEPENDENCE COUNTY</b>			
GP	Baker, John R.	Post Office Box 2116, Batesville 72501	793-5251
IM	Baxley, Paul J.	Post Office Box 2116, Batesville 72501	793-5221
FP	Beck, Carl T.	Post Office Drawer J, Mountain View 72560	269-3834
R	Bess, Lloyd G.	929 Broad Street, Batesville 72501	793-2207
#	Calaway, William H.	Batesville	793-5251
FP	Davidson, Dennis O.	Post Office Box 2116, Batesville 72501	793-2321
FP	Gray, W. Paul	Post Office Box 2437, Batesville 72501	698-1861
PTH	Hill, John M., Jr.	17th and Harrison, Batesville 72501	793-5257
OPH	Jones, Edward T.	180 North 5th, Batesville 72501	793-2371
FP	Ketz, Wesley J.	Post Office Box 2695, Batesville 72501	793-6663
FP	Lytle, Jim E.	Post Office Box 2116, Batesville 72501	793-6887
GP	Moody, Lackey G.	Post Office Box 2335, Batesville 72501	793-2207
R	McClain, C. M., Jr.	929 Broad Street, Batesville 72501	283-5762
FP	Raney, Troy	Post Office Box 83, Cave City 72521	793-5251
FP	Scott, John G.	Post Office Box 2116, Batesville 72501	793-5251
GP	Slaughter, Bob L.	Post Office Box 2416, Batesville 72501	793-2540

Type of Practice	Member's Name	Address	Telephone Number
GP.	Smith, Bob G.	Post Office Box 2116, Batesville 72501.	
GS.	Stalker, James M.	Post Office Box 2575, Batesville 72501.	793-9352
GS.	Stickland, N. E.	17th and Harrison, Batesville 72501.	793-5205
GP.	Tatum, Harold M.	Post Office Box 126, Melbourne 72556.	698-1846
GP.	Taylor, Chaney W.	Post Office Box 2116, Batesville 72501.	368-4344
GP.	Taylor, Charles A.	Post Office Box 2116, Batesville 72501.	793-5251
GP.	Tucker, Charles L.	Post Office Box 38, Ash Flat 72513.	793-5251
AN.	Turner, Samuel R.	Post Office Box 2116, Batesville 72501.	994-7301
FP.	Walker, A. T.	Post Office Box 135, Thayer, Missouri 65791.	698-1861, Ext. 291
OBG.	Wyatt, Finis Q.	Post Office Box 2116, Batesville 72501.	417-264-7121
			793-5251

#### JACKSON COUNTY

IM.	Ashley, John D.	2nd and Laurel, Newport 72112.	
GS.	Carney, J. W.	Post Office Box 699, Newport 72112.	523-6721
IM.	Dudley, Guilford M.	1205 McLain, Newport 72112.	523-8911
PD.	Dunlap, Warner B.	1205 McLain, Newport 72112.	523-8911
GS.	Frankum, Jerry M., Jr.	Post Office Box 606, Newport 72112.	523-8911
GP.	Green, Roger L.	Post Office Box 159, Newport 72112.	523-6721
RD.	Harris, M. Haymond	501 Walnut, Newport 72112 (Res.)	523-6721
RD.	Jackson, Jabez F.	304 Ash, Newport 72112 (Res.)	523-5168
OBG.	Jackson, Jabez F., Jr.	1205 McLain, Newport 72112.	523-8314
FP.	Junkin, A. Bruce.	Post Office Box 69, Newport 72112.	523-3289
RD.	Norris, R. O.	Address Unknown	523-3666
OPH.	Stanfield, Wayne	Post Office Box 129, Newport 72112.	
RD.	Williams, Thomas E.	12 Park Place, Newport 72112 (Res.)	523-3321
FP.	Wright, John C.	1205 McLain, Newport 72112.	523-6121
			523-8911

#### JEFFERSON COUNTY

ADM.	Adams, Carl H.	Post Office Box 500, Grady 71644.	
RD.	Anderson, Charles W.	1411 Olive Street, Pine Bluff 71601 (Res.)	479-3311
FP.	Atnip, Gwyn.	1111 West 15th, Pine Bluff 71603.	535-1661
FP.	Bell, Carl H., Jr.	1602 West 42nd, Pine Bluff 71603.	535-3551
ORS.	Blackwell, Banks.	1400 West 43rd, Pine Bluff 71603.	535-4850
OBG.	Bracy, Calvin M.	1704 West 42nd, Pine Bluff 71603.	534-3122
GP.	Braswell, Thomas R.	Post Office Box 40, England 72046.	536-7550
U.	Brooks, R. Teryl, Jr.	1801 West 40th, Pine Bluff 71603.	842-2553
FP.	Bryant, R. Frank.	1112 South Linden, Pine Bluff 71603.	536-7758
OTO.	Buckley, J. Wayne.	1408 West 43rd, Pine Bluff 71603.	534-4352
P.	Burford, Thomas G.	4313 West Markham, Little Rock 72201.	535-5719
GE.	Butler, Robert C.	1624 West 42nd, Pine Bluff 71603.	664-4500
PUD.	Campbell, James C., Jr.	1604 West 42nd, Pine Bluff 71603.	536-7660
FP.	Cheek, Ben H.	1515 West 42nd, Pine Bluff 71603.	536-8507
PTH.	Clark, James F., Jr.	1515 West 42nd, Pine Bluff 71603.	535-2890
**FP.	Clark, Robert B.	1310 Cherry, Pine Bluff 71601.	535-6800
FP.	Coker, L. Randle.	Post Office Box 276, Star City 71667.	541-0770
EM.	Cranford, Russell L., II.	3324 Breckenridge, Little Rock 72207.	628-4292
IM.	Crenshaw, John.	4201 Mulberry, Pine Bluff 71603.	225-2654
FP.	Cunningham, Thomas J., Jr.	Post Office Box 8773, Pine Bluff 71611.	535-2200
D.	Davis, Charles M.	1416 West 43rd, Pine Bluff 71603.	534-4723
P.	Dean, Lee A.	Post Office Box 1019, Pine Bluff 71613.	535-7477
IM.	Dedman, John D.	4201 Mulberry, Pine Bluff 71603.	534-1834
CD.	Deneke, William A.	1612 West 42nd, Pine Bluff 71603.	535-2200
OBG.	Devi, Talluri S.	1608 West 42nd, Pine Bluff 71603.	536-3015
GS.	Dickins, Robert D.	1003 Cherry, Pine Bluff 71601.	536-0974
R.	Fendley, Claude E.	Post Office Box 7863, Pine Bluff 71611.	534-8141
OPH.	Glasscock, Robert E.	1706 Doctors Drive, Pine Bluff 71603.	534-8651
PD.	Green, Horace L.	1420 West 43rd, Pine Bluff 71603.	534-4357
ORS.	Gullett, Robert R., Jr.	1714 Doctors Drive, Pine Bluff 71603.	534-6210
R.	Hardin, J. David.	Post Office Box 7863, Pine Bluff 71611.	536-7579
IM.	Harper, William F.	1801 West 40th, Suite 1A, Pine Bluff 71603.	534-8651
N.	Harris, Ruben M.	1726 Doctors Drive, Pine Bluff 71603.	536-9230
PD.	Hart, J. Clyde, Jr.	1420 West 43rd, Pine Bluff 71603.	536-7806
OBG.	Hayden, Virgil L.	1706 West 42nd, Pine Bluff 71603.	534-6210
R.	Hegwood, Henri M.	Post Office Box 7863, Pine Bluff 71611.	535-8180
EM.	Henderson, Francis M.	1515 West 42nd, Pine Bluff 71603.	534-8651
PH.	Herron, John T.	Post Office Box 7267, Pine Bluff 71611.	536-7317
IM.	Hoover, S. H.	1708 West 42nd, Pine Bluff 71603.	535-2142
*FP.	House, Roger.	1310 Cherry, Pine Bluff 71601.	536-7300
OPH.	Hughes, L. Milton.	1414 West 43rd, Pine Bluff 71603.	541-0770
FP.	Hussain, Shafqat.	1710 West 42nd, Pine Bluff 71603.	536-7738
U.	Hutchison, Ernest L.	1724 West 42nd, Pine Bluff 71603.	535-4640
OBG.	Hyman, Carl E.	121 East 4th, Pine Bluff 71601.	535-1562
GS.	Irwin, Raymond A., Jr.	1220 West 42nd, Pine Bluff 71603.	534-3365
P.	James, William Joe.	Post Office Box 1019, Pine Bluff 71613.	535-2100
CD.	Jenkins, Bobby John.	1612 West 42nd, Pine Bluff 71603.	534-1834
AN.	Jenkins, Mary Ellen.	1410 West 42nd, Pine Bluff 71603.	536-3015
R.	Joseph, Aubrey S.	Post Office Box 7863, Pine Bluff 71611.	535-5522
AN.	Khan, Mahmood A.	1410 West 42nd, Pine Bluff 71603.	534-8651
GS.	King, G. Errol.	7107 West 12th, #103, Little Rock 72204.	535-5522
OTO.	Langston, Lloyd G.	1408 West 43rd, Pine Bluff 71603.	663-5048
FP.	Lindsey, James A.	1310 Cherry, Pine Bluff 71601.	535-5719
AN.	Malik, Rustam A.	1410 West 42nd, Pine Bluff 71603.	541-0770
FP.	Maynard, Ross E.	303 National Building, Pine Bluff 71601.	535-5522
NEP.	Mehta, Shyam P.	1801 West 40th, Pine Bluff 71603.	534-5732
GS.	Meredith, William R.	1716 West 42nd, Pine Bluff 71603.	536-6105
PUD.	Miller, Donald L.	1515 West 42nd, Pine Bluff 71603.	535-8727
R.	Milligan, Monte C.	Post Office Box 7863, Pine Bluff 71611.	535-3549
IM.	Monroe, Sanford C.	4201 Mulberry, Pine Bluff 71603.	534-8651
FP.	Morris, Harold J.	1030 Poplar, Pine Bluff 71601.	535-2200
R.	McDonald, Robert L.	Post Office Box 7863, Pine Bluff 71611.	534-0822
PD.	McKinney, Daniel C.	1420 West 43rd, Pine Bluff 71603.	534-8651
OPH.	Nixon, William R.	709 West Sixth, Pine Bluff 71601.	534-6210
IM.	Nuckolls, J. William.	1801 West 40th, Pine Bluff 71603.	534-2624
RD.	Payne, Virgil L.	802 West 5th, Pine Bluff 71601 (Res.)	541-0222
CD.	Pearce, Malcolm B.	1612 West 42nd, Pine Bluff 71603.	534-5618
FP.	Perry, V. Bryan.	1722 West 42nd, Pine Bluff 71603.	536-3015
GYN.	Pierce, J. R., Jr.	1712 West 42nd, Pine Bluff 71603.	535-4141
GP.	Raney, Oliver C.	1720 West 42nd, Pine Bluff 71603.	535-3443
ORS.	Reed, E. Frank.	916 Cherry, Pine Bluff 71601.	534-5861
PD.	Reid, Lloyene B.	1420 West 43rd, Pine Bluff 71603.	535-0121
RD.	Rhyne, James T.	Post Office Box 168, Heber Springs 72543 (Res.)	534-2232
GS.	Rittelmeyer, Clarence M.	1716 West 42nd, Pine Bluff 71603.	
GS.	Roberson, George V.	1708 Doctors Drive, Pine Bluff 71603.	535-8727
			535-2716



Type of Practice	Member's Name	Address	Telephone Number
N	Roberts, Dave A.	1604 West 42nd, Pine Bluff 71603	535-4803
GP	Robinette, Joseph S.	1722 Doctors Drive, Pine Bluff 71603	535-2372
GE	Rogers, Henry L.	1624 West 42nd, Pine Bluff 71603	536-7660
RD	Russell, Allen R.	12 Southern Pines Drive, Pine Bluff 71603 (Res.)	534-6481
GYN	Simmons, Calvin R.	1714 West 42nd, Pine Bluff 71603	535-3213
NS	Simpson, P. B., Jr.	1724 Doctors Drive, Pine Bluff 71603	536-8547
GS	Smith, Robert J.	817 Cherry, Pine Bluff 71601	535-1880
GS	Stern, Howard S.	1315 South Linden, Pine Bluff 71603	534-0342
GS	Sullenberger, A. G.	1726 West 42nd, Pine Bluff 71603	534-4407
IM	Talbot, George B.	4201 Mulberry, Pine Bluff 71603	535-2200
PTH	Tisdale, Alfred D., Jr.	1515 West 42nd, Pine Bluff 71603	535-6800
PD	Townsend, Thomas E.	1420 West 43rd, Pine Bluff 71603	534-6210
IM	Tracy, C. Clyde	4201 Mulberry, Pine Bluff 71603	535-2200
GS	Wilkins, Walter J., Jr.	1220 West 42nd, Pine Bluff 71603	535-2100
IM	Wineland, H. L.	1710 Doctors Drive, Pine Bluff 71603	534-3561
A	Worrell, Aubrey M., Jr.	3900 Hickory, Pine Bluff 71603	535-8200
FP	Yalamanchili, Rajasekhara R.	1310 Cherry, Pine Bluff 71601	541-0770

#### JOHNSON COUNTY

FP	Fraser, Robert E.	Post Office Box 668, Clarksville 72830	754-8384
FP	McAuley, John R.	Post Office Box 668, Clarksville 72830	754-8384
GS	McKelvey, Richard E.	Post Office Box 440, Clarksville 72830	754-6510
FP	Patterson Jack T.	Post Office Box 668, Clarksville 72830	754-8384
FP	Pennington, Donald H.	Post Office Box 668, Clarksville 72830	754-2043
GP	Shrigley, Guy P.	Post Office Box 70, Clarksville 72830	754-8384
FP	Taylor, George W.	Post Office Box 668, Clarksville 72830	754-6661
GP	West, Boyce W.	Post Office Box 220, Clarksville 72830	

#### LAFAYETTE COUNTY

GP	Ditsch, Craig E.	Post Office Box 276, Stamps 71860	533-4461
GP	Lee, Willie J.	Post Office Box 276, Stamps 71860	533-4461

#### LAWRENCE COUNTY

GP	Cruse, Edward J.	Post Office Box 116, Black Rock 72415	878-6209
RD	Dickey, Albert B.	704 Northwest 3rd, Walnut Ridge 72476 (Res.)	886-5377
GP	Elders, J. B.	321 Southwest 3rd, Walnut Ridge 72476	886-3162
GS	Hadad, Anibal R.	421 Southwest 3rd, Walnut Ridge 72476	886-2459
FP	Hughes, Joe E.	Post Office Box 150, Walnut Ridge 72476	886-3543
IM	Joseph, Ralph F.	Post Office Box 109, Walnut Ridge 72476	886-3211
FP	Lancaster, Ted S.	Post Office Box 150, Walnut Ridge 72476	886-3543
**OPH	Lowery, Robert D.	Tampa, Florida	886-6611
R	Smoot, John D.	Post Office Box 934, Jonesboro 72401	886-3543
FP	Spades, Sebastian A.	Post Office Box 719, Walnut Ridge 72476	

#### LEE COUNTY

GP	Fields, Elizabeth C.	77 West Main, Marianna 72360	295-5244
FP	Gray, Dwight W.	110 West Chestnut, Marianna 72360	295-3131
FP	McLendon, Mac	Post Office Box 794, Marianna 72360	295-2711

#### LINCOLN COUNTY

GP	Freeland, James W.	Post Office Box 159, Star City 71667	628-4226
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#### LITTLE RIVER COUNTY

FP	Armstrong, James D.	Post Office Box 397, Ashdown 71822	898-3306
GP	Gillean, Myra M.	2nd and Main, Ashdown 71822	898-3306
RD	Peacock, Norman W., Jr.	Peacock Addition, Ashdown 71822 (Res.)	898-3353
GP	Shelton, Joe G., Jr.	Post Office Box 397, Ashdown 71822	898-3306

#### LOGAN COUNTY

FP	Daniel, William R.	114 West 4th, Booneville 72927	675-2455
GP	Harbison, James D.	Post Office Box 327, Booneville 72927	675-2121
FP	Roberts, William J.	114 West 4th, Booneville 72927	675-2455
#	Smith, Charles M.	Paris	963-2191
GP	Smith, James T.	Post Office Box 286, Paris 72855	

#### LONOKE COUNTY

FP	Camp, Arthur W.	Post Office Box 547, Hazen 72064	255-3321
GP	Gartman, Joseph F.	Post Office Box 450, Carlisle 72024	552-7561
GP	Harris, Willie R.	Post Office Box 40, England 72046	842-2553
GP	Holmes, Byron E.	305 West Front, Lonoke 72086	676-6560
FP	Inman, Fred C., Jr.	Post Office Box K, Carlisle 72024	552-7575
OM	Kimsey, Warren H.	Remington Arms Company, Lonoke 72086	676-3161
FP	Morrison, Doyle H.	Post Office Box 993, Cabot 72023	843-3549
GER	Schumann, Gerald M.	Post Office Drawer A, Des Arc 72040	256-4312
GP	Washburn, C. Yulan	Route 1, Box 219, Ward 72176 (Res.)	843-3335

#### MILLER COUNTY

R	Andrews, Allie E.	Post Office Box 689, Texarkana 75501	214-794-4756
GS	Barnes, Walter C.	300 East Sixth, Texarkana 75502	774-3211
GS	Bransford, Robert M.	Post Office Box 778, Texarkana 75501	774-3211
PD	Burnett, James W.	414 Hazel, Texarkana 75502	774-7301
PD	Burroughs, James C.	Post Office Box 778, Texarkana 75501	774-3211
PTH	Chappell, Robert H.	Post Office Box 1288, Texarkana 75501	214-794-8311
OPH	Cook, Lewis C.	2020 College Drive, Texarkana 75503	214-793-7881
O8G	Druff, Gerald H.	300 East Sixth, Texarkana 75502	774-3211
GS	Duncan, Donald L.	Post Office Box 778, Texarkana 75501	774-3211
IM	Goel, Andrew G.	Post Office Box 2027, Texarkana 75501	214-792-6946
ORS	Green, Barry M.	1423 Main, Texarkana 75501	214-794-3661
PD	Hall, Jon D.	300 East Sixth, Texarkana 75502	774-3211
GYN	Harrell, William B., Jr.	Post Office Box 2078, Texarkana 75501	214-792-8231
O8G	Harrison, Jack W.	Post Office Box 778, Texarkana 75501	774-3211
GYN	Harrison, James W.	300 East Sixth, Texarkana 75502	214-792-6976
ORS	Hughes, Mary W.	1001 Main, Texarkana 75501	214-793-3385
RD	Hughes, Robert P.	3935 Texas Boulevard, Texarkana 75503 (Res.)	774-3211
IM	Hutcheson, Fred A., Jr.	300 East Sixth, Texarkana 75502	774-3211
GYN	Jones, John Walter	300 East Sixth, Texarkana 75502	774-2121
PTH	Joyce, Frederick E.	Post Office Box 2763, Texarkana 75501	774-5181
FP	Kemp, Karlton H.	408 Hazel, Texarkana 75502	214-794-6107
GP	Kittrell, James B.	1001 Main, Texarkana 75501	

Type of Practice	Member's Name	Address	Telephone Number
RD.	Laws, John K.	2105 Garland, Texarkana 75502	772-1209
R.	McGinnis, Robert S., Sr.	Post Office Box 1409, Texarkana 75501	214-792-7151
OBG	McWilliams, Benjamin A.	300 East Sixth, Texarkana 75502	774-3211
OPH.	Newton, Norris L.	Post Office Box 2830, Texarkana 75501	214-792-8541
OPH.	Rana, Jayant B.	1411 College Drive, Texarkana 75503	214-792-3729
IM.	Rodgers, Nathaniel L.	600 East Hazel, Texarkana 75501	794-3211
U.	Rountree, Glen A.	300 East Sixth, Texarkana 75502	774-3211
R.	Royal, Jack L.	300 East Sixth, Texarkana 75502	774-3211
FP	Short, Harold H.	1400 College Drive, Texarkana 75503	214-793-5671
TS.	Smith, A. D., Jr.	Post Office Box 1409, Texarkana 75501	214-792-7151
RD	Smith, W. Decker	2300 Laurel, Texarkana 75501 (Res.)	773-3503
OPH	Soyars, James E.	2020 College Drive, Texarkana 75503	214-793-7791
GP	Stringfellow, Jerry B.	1205 East 35th, Texarkana 75501	773-6745
RD	Teasley, Gerald H.	1317 Rio Grande, Texarkana 75503 (Res.)	214-794-5245
GS	Tompkins, William C., Jr.	300 East Sixth, Texarkana 75502	774-3211
PTH	Wicker, Eugene H.	315 East 5th, Texarkana 75501	774-2121
	Wilhelm, Frieda	Dallas, Texas	
GS.	Wren, Herbert B.	Post Office Box 1409, Texarkana 75501	214-792-7151
U	Yarbrough, Charles P.	1102 Main, Texarkana 75501	214-793-5608
GS	Young, Mitchell	1406 College Drive, Texarkana 75503	214-792-8264
<b>MISSISSIPPI COUNTY</b>			
PH	Beasley, Joseph E.	Mississippi County Health Department, Blytheville 72315	763-7064
FP.	Biggerstaff, Jerry R.	608 West Lee, Osceola 72370	563-3576
IM.	Brock, Charles C., Jr.	527 North Sixth, Blytheville 72315	763-8118
U	Campbell, Charles E., Jr.	609 Fulton, Blytheville 72315	763-0855
FP	Cole, C. R.	519 North Sixth, Blytheville 72315	763-1554
FP.	Cullom, S. Reggie	608 West Lee, Osceola 72370	563-2608
GP	Elliott, John Q.	Post Office Box 747, Blytheville 72315	763-4548
GP	Fairley, Eldon	Post Office Box 68, Osceola 72370	563-6568
GP	Fairley, Julian R.	Post Office Box 68, Osceola 72370	563-6568
GS.	Fergus, R. Scott	Professional Building, Osceola 72370	563-3248
R	Gratz, John F., Jr.	2891 Central, Memphis, Tennessee 38111	
GP	Green, W. O., Jr.	Post Office Box 268, Blytheville 72315	763-6802
PTH	Hart, Sybil R.	Post Office Box 312, Blytheville 72315	762-3346
R	Hart, Wade A.	Post Office Box 312, Blytheville 72315	762-3342
GP	Holcomb, C. E.	511 North Sixth, Blytheville 72315	763-3922
GP	Hubener, Lemly L.	Post Office Box 1806, Blytheville 72315	762-2021
	Hubener, Louis F.	Gainesville, Florida	
IM	Jones, Herbert	Post Office Box 321, Blytheville 72315	763-8032
IM	Massey, Lorenzo D.	Post Office Box 388, Osceola 72370	563-6275
FP.	Osborne, Merrill J.	Tenth and Highland, Blytheville 72315	762-5360
GP	Pollock, George D.	608 West Lee, Osceola 72370	563-3576
FP	Rhodes, R. F.	608 West Lee, Osceola 72370	563-2608
GP	Rodman, T. N.	Post Office Box 260, Leachville 72438	539-6337
GP	Russell, James D.	527 North Sixth, Blytheville 72315	763-8118
GS	Shaneyfelt, Eugene A.	Post Office Box 630, Manila 72442	561-4421
FP	Sims, H. C., Jr.	525 North 10th, Blytheville 72315	763-0521
OPH	Uteley, F. E.	515 North Sixth, Blytheville 72315	763-4575
OBG	Webb, James J.	Post Office Box 547, Blytheville 72315	762-2131
GS	Workman, W. W.	527 North Sixth, Blytheville 72315	763-8118
	Zufari, Munir	522 South 16th, Fort Smith 72901	785-1413
<b>MONROE COUNTY</b>			
FP.	David, N. C., Jr.	108 West Ash, Brinkley 72021	734-2212
GP	Pupsta, Benedict F.	Post Office Box 250, Clarendon 72029	747-3321
GP	Stone, Herd E.	Post Office Box A, Holly Grove 72069	462-3393
GP	Walker, Walter L.	114 South New Orleans, Brinkley 72021	734-3242
FP	Williams, J. P., Jr.	127 South New Orleans, Brinkley 72021	734-1331
<b>NEVADA COUNTY</b>			
GP.	Avery, Charles D.	427 East Sixth, Prescott 71857	887-2625
GP.	Crow, H. Blake	327 East 2nd South, Prescott 71857	887-3846
RD	Hairston, Glenn G.	Post Office Box 675, Prescott 71857 (Res.)	887-2155
FP.	Portis, Richard P.	Post Office Box 442, Prescott 71857	887-6651
FP.	Russell, James T.	Post Office Box 442, Prescott 71857	887-6651
FP.	Young, Michael C.	Post Office Box 442, Prescott 71857	887-6651
<b>OUACHITA COUNTY</b>			
IM	Daniel, William A.	Post Office Box 757, Camden 71701	836-8101
IM	Dedman, J. L.	415 Hospital Drive, Camden 71701	836-5013
GP.	Drewrey, Lawrence E.	Post Office Box 995, Camden 71701	836-6811
AN	Ellis, Joseph L.	Post Office Box 126, Camden 71701	836-7144
GS.	Fohn, Charles H.	415 Hospital Drive, Camden 71701	836-5013
GP	Guthrie, James	Post Office Box 757, Camden 71701	836-8101
FP.	Hout, Judson N.	Post Office Box 757, Camden 71701	836-8101
GS.	Jameson, J. B., Jr.	Post Office Box 994, Camden 71701	836-5098
FP.	Kendall, J. R.	Post Office Box 757, Camden 71701	836-8101
FP.	Livingston, Billy B.	225 Jackson, Camden 71701	836-7367
GP	Miller, John H.	225 Jackson, Camden 71701	836-8101
FP.	Nunnally, Robert H.	Post Office Box 757, Camden 71701	836-8101
IM	Ozment, Lowell V.	Post Office Box 757, Camden 71701	836-8101
GYN	Plant, Richard F.	Post Office Box 762, Camden 71701	836-4169
FP	Sanders, Cal R.	Post Office Box 757, Camden 71701	836-8101
R.	Thorne, A. E.	Post Office Box 797, Camden 71701	836-1221
<b>PHILLIPS COUNTY</b>			
GP.	Barrow, John H.	614 Oakland, Helena 72342	338-8622
FP.	Bell, L. J. Patrick	626 Poplar, Helena 72342	338-8163
OPH	Berger, Alfred A.	801 Perry, Helena 72342	338-8781
#	Biggs, William W.	Helena	
RD.	Butts, James W.	708 McDonough, Helena 72342 (Res.)	338-8006
GP	Capes, Bernard	Post Office Box 2398, West Helena 72390	572-2621
GP.	Ellis, William A., Jr.	603 Porter, Helena 72342	338-3037
GS	Elovitz, Maurice J.	408 Porter, Helena 72342	338-7218
GP	Faulkner, H. N.	513 Porter, Helena 72342	338-7401
GP	Kirkman, C. M. T.	1105 Perry, Helena 72342	338-8712
FP	Miller, Robert D.	616 Elm, Helena 72342	338-8531
GP	McCarty, C. P.	513 Porter, Helena 72342	338-7401
FP.	McCarty, Gordon E., Jr.	107 Hickory Hill, Helena 72342	338-8377
GP	McDaniel, M. A.	513 Porter, Helena 72342	338-7401
GP.	Oldham, H. B.	Post Office Box 2538, West Helena 72390	572-7581



Type of Practice	Member's Name	Address	Telephone Number
			572-6413
GP	Paine, William T.	661 Oakland, Helena 72342	338-6749
U	Vasudevan, P.	633 Oakland, Helena 72342	829-2386
GP	Wise, James E., Jr.	Post Office Box 66, Marvell 72366	
<b>POLK COUNTY</b>			
			394-5880
FP	Fried, David D.	Northside Shopping Center, Mena 71953	394-3550
GP	Hefner, David P.	518 Janssen, Mena 71953	394-2277
GP	Redman, Pierre P.	513 Mena, Mena 71953	394-3344
GP	Rogers, Henry N.	600 West 7th, Mena 71953	394-4221
GS	Wood, John P.	907 Mena, Mena 71953	
<b>POPE COUNTY</b>			
			968-7170
FP	Ashcraft, Ted E.	2524 West Main, Russellville 72801	968-5261
OTO	Austin, Nathan F.	2504 West Main, Russellville 72801	968-2345
GS	Bachman, David S.	3105 West Main Place, Russellville 72801	968-2345
O8G	Battles, Larry D.	3105 West Main Place, Russellville 72801	968-3323
P	Bell, Linda O.	2301 West Main, Russellville 72801	968-3323
U	Bell, Robert A.	2301 West Main, Russellville 72801	968-5670
AN	Birum, Patricia J.	Post Office Box 785, Russellville 72801	968-2345
PD	Bost, R. Kingsley	3105 West Main Place, Russellville 72801	968-3323
U	Brown, Charles H.	2301 West Main, Russellville 72801	968-7930
R	Burgess, James G.	2504 West Main, Russellville 72801	968-2345
FP	Carter, James M.	3105 West Main Place, Russellville 72801	968-2345
GS	Crumpler, Joe B.	3105 West Main Place, Russellville 72801	968-2345
O8G	Dunn, Donald L.	3105 West Main Place, Russellville 72801	968-6969
D	Galloway, William W.	2504 West Main, Russellville 72801	
#	Gardner, Ellis	Russellville	229-3306
RD	Gavlas, Frank E.	310 North 2nd, Dardanelle 72834 (Res.)	
#	Heidgen, Martin F.	Little Rock	968-2345
FP	Henry, J. Arnold	3105 West Main Place, Russellville 72801	968-3200
ORS	Honghiran, Ted	2504 West Main, Russellville 72801	968-3611
GP	Kimball, G. Howard	1919 West Main, Russellville 72801	968-7930
R	King, John W.	3203 West Main, Russellville 72801	968-2345
GP	King, W. E., Jr.	3105 West Main Place, Russellville 72801	968-2124
ORS	Kolb, James M., Jr.	305 Skyline Drive, Russellville 72801	331-2828
FP	Lane, W. H., Jr.	625 Water, Dover 72837	968-2242
OPH	Lawrence, Frank M.	Post Office Box 400, Russellville 72801	968-7302
OPH	Lovell, Richard K.	Post Office Box 1107, Russellville 72801	968-2156
FP	Lowrey, Douglas H.	809 West Main, Russellville 72801	968-7302
OPH	Lyford, Joe H., Jr.	Post Office Box 1107, Russellville 72801	641-2992
GP	Malone, George E.	Post Office Box 187, Atkins 72823	968-2345
FP	Mauch, E. Jane	3105 West Main Place, Russellville 72801	968-2156
FP	Meyer, Kelly H.	809 West Main, Russellville 72801	968-2604
RD	Millard, Roy I.	1704 West 3rd Court, Russellville 72801 (Res.)	968-2242
OPH	Mobley, Max J.	Post Office Box 400, Russellville 72801	785-1441
RD	McNamara, William L.	2121 Towson, Fort Smith 72901 (Res.)	968-2345
FP	New, Kenneth O.	3105 West Main Place, Russellville 72801	968-7930
R	Riley, Donald C.	3203 West Main, Russellville 72801	968-6781
PTH	Stolz, Gerald A., Jr.	Post Office Box 925, Russellville 72801	968-2345
FP	Teeter, S. D.	3105 West Main Place, Russellville 72801	968-2345
IM	Thurby, W. Robert	3105 West Main Place, Russellville 72801	968-2345
IM	Wilkins, Charles F., Jr.	3105 West Main Place, Russellville 72801	968-2156
GP	Williams, David M.	809 West Main, Russellville 72801	968-6211
EM	Young, Sandra S.	1808 West Main, Russellville 72801	
<b>PULASKI COUNTY</b>			
			664-4532
AN	Abbott, William W.	500 South University, Little Rock 72205	227-8000
IM	Abraham, James H.	10001 Lile Drive, Little Rock 72205	225-0880
NS	Adamez, John H.	750 Medical Towers Building, Little Rock 72205	224-0110
PUD	Adamson, James S.	890 Medical Towers Building, Little Rock 72205	664-5100
OPH	Alford, T. Dale	5700 West Markham, Little Rock 72205	664-4131
O8G	Allen, D. B.	500 South University, Little Rock 72207	664-9191
O8G	Allen, E. Stewart	1100 North University, Little Rock 72207	227-8300
TS	Allen, John E., Jr.	1050 Medical Towers Building, Little Rock 72205	664-0900
PS	Allen, Thomas H. "Bill"	413 North University, Little Rock 72205	661-5740
**R	Allison, Jack R.	4301 West Markham, Little Rock 72201	227-8000
IM	Amir, Jacob	10001 Lile Drive, Little Rock 72205	982-4551
FP	Anderson, Leslie F.	Post Office Box 805, Jacksonville 72076	661-3000
PTH	Araoz, Carlos A.	#1 St. Vincent Circle, Suite 220, Little Rock 72205	227-7888
GS	Armstrong, Howard M.	340 Doctors Park Building, Little Rock 72205	661-8542
PTH	Atkinson, William E., Jr.	#1 St. Vincent Circle, Suite 220, Little Rock 72205	835-1046
RD	Ault, Charles C.	#3 Helen Drive, North Little Rock 72116 (Res.)	664-2332
RD	Autry, Daniel H.	1900 North Tyler, Little Rock 72207 (Res.)	664-2434
GS	Baber, John C., Jr.	500 South University, Little Rock 72205	227-0680
P	Backus, Joe T.	12115 Hinson Road, Little Rock 72212	227-5050
OT	Bailey, H. A. Ted, Jr.	1200 Medical Towers Building, Little Rock 72205	661-5170
PTH	Baker, Glen F.	4301 West Markham, Slot 517, Little Rock 72201	664-4364
U	Baker, Johnson J.	500 South University, Little Rock 72205	664-4044
PD	Baldwin, Deane G.	500 South University, Little Rock 72205	224-5050
O8G	Baldwin, Maxwell R.	880 Medical Towers Building, Little Rock 72205	224-0102
FP	Ballard, C. E., Jr.	250 Doctors Park Building, Little Rock 72205	664-8502
GYN	Barclay, David L.	500 South University, Little Rock 72205	661-5923
GYN	Bard, David S.	4301 West Markham, Little Rock 72201	224-5220
FP	Barg, Charles D.	100 Doctors Park Building, Little Rock 72205	664-5860
CD	Barlow, Brian E.	#1 St. Vincent Circle, Little Rock 72205	664-1762
U	Barnett, Troy F.	#1 St. Vincent Circle, Little Rock 72205	661-5740
R	Barnhard, Howard J.	4301 West Markham, Little Rock 72201	225-9222
FP	Barron, Edwin N., Jr.	7915 Cantrell Road, Little Rock 72207	664-4131
O8G	Batres-Soza, Francisco	500 South University, Little Rock 72205	664-2245
GS	Bauer, Frank M.	500 South University, Little Rock 72205	227-5240
R	Bearden, James R.	1100 Medical Towers Building, Little Rock 72205	375-4419
OPH	Becquet, Norbert J.	115 West Sixth, Little Rock 72201	758-1002
FP	Belknap, Melvin L.	1801 Maple, North Little Rock 72114	225-2478
RD	Bennett, Eaton W.	1003 Loretta Lane, Little Rock 72207 (Res.)	227-7596
CD	Bennett, F. A., Jr.	690 Medical Towers Building, Little Rock 72205	224-3424
GS	Berry, Fred B.	1060 Medical Towers Building, Little Rock 72205	771-3000
FP	Bethell, John P., Jr.	Memorial Hospital, North Little Rock 72114	376-1160
FP	Betton, Harold B.	1221 Bishop, Little Rock 72202	771-1927
P	Betts, Charles S.	50 Westwind Drive, North Little Rock 72118	758-1620
GS	Bevans, David W., Jr.	406 West Pershing, North Little Rock 72114	664-4532
AN	Beverly, Nolan F.	500 South University, Little Rock 72205	372-8361
R	Binet, Eugene F.	300 East Roosevelt, Little Rock 72206	758-2588
D	Biondo, Raymond V.	Post Office Box 921, North Little Rock 72115	

Type of Practice	Member's Name	Address	Telephone Number
CD	Bishop, William B.	10001 Lile Drive, Little Rock 72205	227-8000
U	Bissada, Nabil K.	4301 West Markham, Little Rock 72201	661-5240
U	Black, Hal R., Jr.	200 Doctors Park Building, Little Rock 72205	225-9755
GP	Black, H. Thurston	123 North Van Buren, Little Rock 72205	666-0142
#	Black, Millard W.	Little Rock	
GE	Blackshear, Jack L.	650 Medical Towers Building, Little Rock 72205	227-8074
ORS	Blankenship, William F.	1100 North University, Little Rock 72207	664-5720
PD	Boellner, Samuel W.	300 Medical Towers Building, Little Rock 72205	227-4750
CD	Boger, James E.	690 Medical Towers Building, Little Rock 72205	227-7596
NS	Boop, Warren C., Jr.	4301 West Markham, Slot 507, Little Rock 72201	661-5270
N	Bornhofen, John H.	300 Medical Towers Building, Little Rock 72205	227-4750
FD	Bost, Roger B.	4301 West Markham, Little Rock 72201	661-5260
OPH	Bowers, John W.	6602-A Baseline Road, Little Rock 72209	568-4931
ORS	Bowker, John H.	12th and Marshall, Little Rock 72201	227-3555
NM	Boyd, Charles M.	4301 West Markham, Little Rock 72201	661-5761
P	Boyle, Ronald H.	Post Office Box 718, Yellville 72687 (Res.)	449-4375
U	Bradburn, Curry B.	200 Doctors Park Building, Little Rock 72205	225-9755
R	Brenner, George H., Jr.	1100 Medical Towers Building, Little Rock 72205	227-5240
CDS	Brenowitz, Jerold B.	200 Medical Towers Building, Little Rock 72205	224-5666
RD	Briggs, Barnett P.	2805 Foxcroft Square, #403, Little Rock 72207 (Res.)	225-1203
PD	Briggs, Dale D.	500 South University, Little Rock 72205	664-0804
IM	Brinkley, Roy A.	220 Doctors Park Building, Little Rock 72205	227-6350
OTO	Brizzolara, A. J.	500 South University, Little Rock 72205	664-4381
P	Broach, R. Fred	12115 Hinson Road, Little Rock 72212	227-0680
RD	Brown, Martha M.	2014 Boulevard, Little Rock 72204 (Res.)	663-7697
U	Brown, T. Duell	1120 Marshall, Little Rock 72202	375-3376
GE	Browning, Donald G.	409 North University, Little Rock 72205	664-6980
ADM	Bruce, Thomas A.	4301 West Markham, Little Rock 72201	661-5350
GS	Buchanan, F. R.	500 South University, Little Rock 72205	664-4324
PD	Buchanan, Gilbert A.	500 South University, Little Rock 72205	664-4117
GS	Buchman, Joseph A.	500 South University, Little Rock 72205	664-9116
FP	Buford, Joe Lee	1801 Maple, North Little Rock 72114	758-1002
AN	Bumpas, Joe H.	500 South University, Little Rock 72205	664-4532
PTH	Burger, Robert A.	9600 West 12th, Little Rock 72201	227-2888
TS	Burnett, Hugh F.	990 Medical Towers Building, Little Rock 72205	227-9080
**FP	Burns, Robert E.	13th and Marshall, Little Rock 72202	375-1116
P	Busby, John V.	12115 Hinson Road, Little Rock 72212	227-0680
RD	Byrd, Lucas M., Jr.	36 Lakeshore Drive, Little Rock 72204 (Res.)	565-6046
PD	Byrne, William J.	804 Wolfe Street, Little Rock 72201	372-1510
R	Caignet, Juan E.	300 East Roosevelt Road, Little Rock 72206	372-8361, Ext. 383
OPH	Calcote, Robert A.	2500 McCain Place, North Little Rock 72116	771-1166
GS	Caldwell, Fred T., Jr.	4301 West Markham, Little Rock 72201	661-6173
FP	Calhoon, J. Dale	Post Office Box 805, Jacksonville 72076	982-4551
R	Calhoun, Joseph D.	500 South University, Little Rock 72205	664-3078
AN	Callender, Thomas B.	500 South University, Little Rock 72205	661-4180
TS	Campbell, Gilbert S.	4301 West Markham, Little Rock 72201	661-6177
R	Campbell, James W.	500 South University, Little Rock 72205	664-3914
A	Caplinger, Kelsy J., III	Post Office Box 5675, Little Rock 72215	227-5210
P	Carnahan, Robert G.	4313 West Markham, Little Rock 72201	664-4500
FP	Carson, Layne E.	300 East Roosevelt Road, Little Rock 72206	372-8361, Ext. 595
R	Caruthers, Samuel B., Jr.	1100 Medical Towers Building, Little Rock 72205	227-2771
RD	Cazort, Alan G.	5117 Edgewood, Little Rock 72207 (Res.)	663-3623
ORS	Chakales, Harold H.	405 North University, Little Rock 72205	664-1500
OPH	Chandler, Billy M.	406 West Pershing, North Little Rock 72114	758-1651
FP	Chapman, Jerry C.	Post Office Box 805, Jacksonville 72076	982-4551
RD	Chappell, Ewin S.	400 North University, Little Rock 72205 (Res.)	663-4747
FP	Cheairs, David B.	330 Doctors Park Building, Little Rock 72205	227-6363
U	Chisholm, Dan P.	501 South University, Little Rock 72205	664-3914
R	Christeson, William W.	300 East Roosevelt Road, Little Rock 72206	372-8361
ORS	Christian, John D.	1100 North University, Little Rock 72207	664-7710
FP	Chudy, Amail	1801 Maple, North Little Rock 72114	758-1002
FP	Church, B. L.	321 Maple, North Little Rock 72114	374-7796
OBG	Church, Marion M.	410 West Pershing, North Little Rock 72114	758-1022
AN	Clark, Richard B.	4301 West Markham, Little Rock 72201	661-5000
OPH	Clifton, E. C.	516 Scott, Little Rock 72201	374-6338
FP	Cobb, Jock S.	North Hills Family Clinic, Sherwood 72116	835-6800
R	Cockrill, Howard, Jr.	500 South University, Little Rock 72205	664-3914
OTO	Colclasure, Joe B.	1200 Medical Towers Building, Little Rock 72205	227-5050
OPH	Cook, Raymond C.	601 Scott, Little Rock 72201	375-8273
GS	Corbell, Carroll E.	500 South University, Little Rock 72205	663-6339
OBG	Cornell, Paul J.	500 South University, Little Rock 72205	664-2277
OS	Cornett, James K.	5326 West Markham, Little Rock 72205	664-6603
OPH	Cosgrove, K. W., Jr.	630 Medical Towers Building, Little Rock 72205	224-0400
CRS	Craig, Marion S.	500 South University, Little Rock 72205	666-0106
GYN	Crews, J. Travis	500 South University, Little Rock 72205	664-8505
OPH	Cross, J. B.	500 South University, Little Rock 72205	666-0126
CDS	Crow, R. Lewis	600 Medical Towers Building, Little Rock 72205	227-9434
IM	Cullen, Philip T.	500 South University, Little Rock 72205	664-4171
R	Dalrymple, Glenn V.	1100 Medical Towers Building, Little Rock 72205	227-5240
GP	Daugherty, Joe D.	Post Office Box 336, Jacksonville 72076	982-0576
GP	Daugherty, John L.	Post Office Box 336, Jacksonville 72076	982-0576
OBG	Davis, Gary D.	Post Office Box 55038, Little Rock 72205	224-5050
GS	Dean, Gilbert O.	403 Donaghey Building, Little Rock 72201	375-5543
OPH	Deer, Philip J., Jr.	8500 West Markham, Little Rock 72205	224-4701
**PD	deMiranda, Federico C.	4301 West Markham, Little Rock 72201	661-5991
PD	Dennis, James L.	4301 West Markham, Little Rock 72201	661-6301
OTO	Dickins, John R. E.	1200 Medical Towers Building, Little Rock 72205	227-5050
NS	Dickins, Robert D., Jr.	750 Medical Towers Building, Little Rock 72205	225-0880
ORS	Dickson, D. Bud	500 South University, Little Rock 72205	663-4163
FP	Dillard, Daniel C.	3500 South University, Little Rock 72204	562-4838
R	Diner, Wilma C.	4301 West Markham, Little Rock 72201	661-5745
R	Dodd, Doyne	1100 Medical Towers Building, Little Rock 72205	227-2771
RD	Dodge, Eva F.	Quapaw Tower Apartments, Little Rock 72202 (Res.)	374-9349
ORS	Dodson, C. Frank, Jr.	Post Office Box 5270, Little Rock 72215	224-6900
ORS	Dornenburg, Peter R.	#1 St. Vincent Circle, Little Rock 72205	661-0350
P	Douglas, Warren M.	260 Medical Towers Building, Little Rock 72205	224-2447
U	Downs, Ralph A.	#1 St. Vincent Circle, Little Rock 72205	664-1762
PDC	Dungan, William T.	Ninth and Marshall, Little Rock 72201	372-1510
FP	Durham, James W.	Post Office Box 805, Jacksonville 72076	982-4551
RD	Easley, Edgar J.	220 Linwood Court, Little Rock 72205 (Res.)	663-5086
ORS	Easter, Rex M.	601 North University, Little Rock 72205	666-0144
P	Eckart, Emile P.	4313 West Markham, Little Rock 72201	664-4500
AN	Edge, Otis H.	500 South University, Little Rock 72205	664-8489
**PD	Elliott, Greg.	4301 West Markham, Little Rock 72201	661-5991



Type of Practice	Member's Name	Address	Telephone Number
FP	Evans, Gilbert C.	4942 West Markham, Little Rock 72205	664-4127
FP	Farmer, Joseph F.	11125 Arcade Drive, Little Rock 72212	225-2594
FP	Farris, Guy R.	6213 Lee Avenue, Little Rock 72205	664-2115
IM	Fendley, Jack T.	2500 McCain Place, North Little Rock 72116	771-0300
R	Ferris, Ernest J.	4301 West Markham, Little Rock 72201	661-5740
FP	Fewell, Ronald D.	Post Office Box 459, Jacksonville 72076	982-2141
GS	Fielder, Charles R.	406 West Pershing, North Little Rock 72114	758-1620
R	Fincher, Robert L.	1100 Medical Towers Building, Little Rock 72205	227-5240
U	Finkbeiner, Alex E.	4301 West Markham, Little Rock 72201	661-5240
PD	Fiser, Robert H., Jr.	4301 West Markham, Little Rock 72201	661-5905
GP	Fitzgibbon, Carney, Jr.	410 South Martin, Little Rock 72205 (Res.)	666-8861
FP	Flack, James V., Jr.	424 North University, Little Rock 72205	664-4810
NS	Flanigan, Stevenson	4301 West Markham, Little Rock 72201	661-5270
NS	Flanigin, Herman F., Jr.	4301 West Markham, Little Rock 72201	661-5270
RD	Fletcher, Elizabeth D.	2000 Magnolia, Apt. 232, Little Rock 72202 (Res.)	666-1248
NS	Fletcher, Thomas M.	500 South University, Little Rock 72205	664-3021
GYN	Floyd, Bill G.	210 Doctors Park Building, Little Rock 72205	224-6770
OM	Ford, George W.	8000 Interstate 30, Little Rock 72209	569-4284
FP	Foster, Julian L.	3500 South University Little Rock 72204	562-4838
U	Fraiser, L. P.	200 Doctors Park Building, Little Rock 72205	225-9755
PD	Fraser, Eric A.	516 West Pershing, North Little Rock 72114	758-1530
EM	Frye, Ivan L.	9600 West Kanis Road, Little Rock 72205	227-2300
**R	Fuller, Clinton J.	4301 West Markham, Little Rock 72201	661-5740
O8G	Fuller, Dale	2000 Fendley, North Little Rock 72114	758-3774
D	Fulmer, H. Ray	1414 Donaghey Building, Little Rock 72201	374-1649
OPH	Fulmer, John M.	5410 West Markham, Little Rock 72205	664-3142
#	Fulton, William L.	North Little Rock	
CD	Galbraith, Jo Etta	#1 St. Vincent Circle, Little Rock 72205	664-5860
N	Galbraith, Robert C.	300 Medical Towers Building, Little Rock 72205	227-4750
OTO	Gay, Ellery C., Jr.	1200 Medical Towers Building, Little Rock 72205	227-5050
ORS	Gerdes, Michael H.	804 Wolfe Street, Little Rock 72201	376-4621
R	Gettys, Joseph M., Jr.	1100 Medical Towers Building, Little Rock 72205	227-5240
N	Gibson, Gordon L.	300 Medical Towers Building, Little Rock 72205	227-4750
NS	Giles, Wilbur M.	750 Medical Towers Building, Little Rock 72205	225-0880
GYN	Gillespie A. Tharp	500 South University, Little Rock 72205	664-9555
PD	Glenn, Robert E.	804 Wolfe Street, Little Rock 72201	376-4621, Ext. 229
AN	Glenn, Wayne B.	500 South University, Little Rock 72205	664-4532
END	Glover, Lawson E., Jr.	10001 Lile Drive, Little Rock 72205	227-8000
R	Glover, W. Clyde	1100 Medical Towers Building, Little Rock 72205	227-5240
P	Good, Henry H.	#1 St. Vincent Circle, Little Rock 72205	664-1060
GE	Gordon, O. T., Jr.	#1 St. Vincent Circle, Little Rock 72205	664-5932
A	Gordon, Vida H.	9501 North Rodney Parham Road, Little Rock 72207	227-8545
FP	Goss, Kenneth G.	1700 West 13th, Little Rock 72202	375-2171
PD	Gosser, Bob L.	516 West Pershing, North Little Rock 72114	758-1530
IM	Goza, George M., Jr.	500 South University, Little Rock 72205	666-2881
GS	Graham, G. Grimsley	990 Medical Towers Building, Little Rock 72205	227-9080
RD	Gray, Edwin F.	11901 Fairway Drive, Little Rock 72212 (Res.)	224-0220
*FP	Gresham, Edward A.	4301 West Markham, Little Rock 72201	661-5000
IM	Greutter, John E.	2112 North Beechwood Road, Little Rock 72207 (Res.)	663-1547
ORS	Grimes, H. Austin	Post Office Box 5270, Little Rock 72215	224-6900
GS	Growdon, James H.	500 South University, Little Rock 72205	664-4146
GYN	Hagler, James L.	500 South University, Little Rock 72205	664-5330
IM	Hall, Alastair D.	500 South University, Little Rock 72205	664-0027
PUD	Hampton, John R.	500 South University, Little Rock 72205	661-9393
OPH	Hankins, Edwin, III	500 South University, Little Rock 72205	666-0311
OPH	Hardberger, R. E.	#1 St. Vincent Circle, Little Rock 72205	661-0450
AN	Harger, C. Harold	1150 Medical Towers Building, Little Rock 72205	227-7590
IM	Harper, Ernest H.	400 West Pershing, North Little Rock 72114	227-8000
FP	Harper, Gary E.	123 Pearl, Little Rock 72205	375-3000
**FP	Harrell, Robert E., Jr.	4301 West Markham, Little Rock 72201	375-1116
P	Harrendorf, Cagle	500 South University, Little Rock 72205	663-6346
R	Harris, Donald R.	Post Office Box 7509, Little Rock 72217	664-8573
IM	Harris, Michael N.	10001 Lile Drive, Little Rock 72205	227-8000
NM	Harris, William T.	500 South University, Little Rock 72205	664-3914
P	Harrison, A. Vale	930 Medical Towers Building, Little Rock 72205	225-7433
FP	Harrison, Roy E.	8824 Chicot Road, Little Rock 72209	562-8600
P	Hawley, Harold B.	10800 Yosemite Valley Drive Little Rock 72212 (Res.)	225-1247
GS	Hayden, William F.	500 South University, Little Rock 72205	664-2434
PS	Hayes, Harry, Jr.	#1 St. Vincent Circle, Little Rock 72205	666-2811
R	Haynes, W. Ducote	500 South University, Little Rock 72205	664-3914
U	Headstream, James W.	500 South University, Little Rock 72205	664-4365
P	Hearnberger, Henry G., Jr.	4313 West Markham, Little Rock 72201	664-4500
FP	Hedges, Harold H.	424 North University, Little Rock 72205	664-4810
A	Hefley, Bill F.	Post Office Box 5675, Little Rock 72215	227-5210
FP	Hendren, Michael C.	330 Doctors Park Building, Little Rock 72205	227-6363
P	Henker, Fred O., III	4301 West Markham, Little Rock 72201	661-5266
GYN	Henry, Charles R., Sr.	500 South University, Little Rock 72205	664-4191
N	Henry, G. Morrison	300 Medical Towers Building, Little Rock 72205	227-4750
OPH	Henry, J. Forrest, Jr.	516 Scott, Little Rock 72201	374-6338
OPH	Henry, Richard Y.	312 West Pershing, North Little Rock 72114	758-7627
PD	Henry, Robert L., Jr.	500 South University, Little Rock 72205	664-4044
IM	Herron, Jerry M.	890 Medical Towers Building, Little Rock 72205	224-0110
AN	Hickey, Joseph P.	1150 Medical Towers Building, Little Rock 72205	664-2496
AN	Hill, Howell V.	1150 Medical Towers Building, Little Rock 72205	227-7590
FP	Hodges, William B.	Post Office Box 957, North Little Rock 72115	758-1450
R	Holder, John C.	4301 West Markham, Little Rock 72201	661-5740
RD	Hollenberg, Henry G.	#7 Longfellow Circle, Little Rock 72207 (Res.)	663-7767
RD	Hollis, Nicholas T.	1817 North Monroe, Little Rock 72207 (Res.)	663-4160
FP	Holmes, Harlan C.	1160 Medical Towers Building, Little Rock 72205	225-6123
GS	Holt, L. Gordon	5326 West Markham, Little Rock 72205	666-9442
RHU	Holt, Stephen D.	10001 Lile Drive, Little Rock 72205	227-8000
R	Holton, Jerry C.	500 South University, Little Rock 72205	664-3914
#	Honeycutt, W. Mage	Little Rock	
R	Hooper, Anthony C.	4301 West Markham, Little Rock 72201	661-5741
**P	Hotchkiss, Robert L.	4313 West Markham, Little Rock 72201	664-4500
P	Howard, John G.	790 Medical Towers Building, Little Rock 72205	227-6370
N	Howell, Coburn S., Jr.	300 Medical Towers Building, Little Rock 72205	227-4750
O8G	Howell, Marsha T.	120 Doctors Park Building, Little Rock 72205	224-4738
ORS	Hundley, John M.	412 Cross, Little Rock 72201	375-5338
ORS	Hutson, Harold G.	110 Doctors Park Building, Little Rock 72205	227-4150
RD	Jackson, George W.	Route 4, Box 660, Hot Springs 71901	
IM	Jackson, J. Presley	10001 Lile Drive, Little Rock 72205	227-8000
FP	Jackson, M. A.	1304 Wright Avenue, Little Rock 72206	374-7940

Type of Practice	Member's Name	Address	Telephone Number
**PD..	Jacobs, Richard F.	4301 West Markham, Little Rock 72201	
D	Jansen, G. Thomas	500 South University, Little Rock 72205	661-5905
PTH	Jimenez, Jorge F.	804 Wolfe Street, Little Rock 72201	664-4161
+	Johnson, Anthony D.	4301 West Markham, Little Rock 72201	376-4621
CD	Johnson, Ben D.	500 South University, Little Rock 72205	661-5000
PTH	Johnson, 8. Richard	9601 West 12th, Little Rock 72201	661-0300
OBG	Johnson, D. Richard	500 South University, Little Rock 72205	227-2888
IM	Johnson, Henry D.	500 South University, Little Rock 72205	664-8003
ORS	Johnson, Philip H.	Post Office Box 5270, Little Rock 72215	664-4171
OBG	Johnson, Spencer L.	500 South University, Little Rock 72205	224-6900
A	Johnston, Thomas G.	Post Office Drawer A, Little Rock 72205	661-1711
ORS	Jones, Kenneth G.	Post Office Box 5270, Little Rock 72215	664-3904
GS	Jones, Robert D.	500 South University, Little Rock 72205	224-6900
D	Jones, William N.	500 South University, Little Rock 72205	664-4747
NS	Jordan, F. Richard	4301 West Markham, Slot 507, Little Rock 72201	664-0418
NS	Jouett, W. Ray	750 Medical Towers Building, Little Rock 72205	661-5270
R	Joyce, John W.	1100 Medical Towers Building, Little Rock 72205	225-0880
RD	Junkin, Ruth H.	Route 3, Box 367-D, Little Rock 72211 (Res.)	227-5240
AN	Kaemmerling, Raymond E.	500 South University, Little Rock 72205	821-3276
FP	Kagy, John K.	10121 North Rodney Parham, Little Rock 72207	664-8489
IM	Kahn, Alfred, Jr.	1300 West Sixth, Little Rock 72201	224-2525
PTH	Kalderon, Albert E.	4301 West Markham, Slot 517, Little Rock 72201	374-5588
D	Keeran, Michael G.	500 South University, Little Rock 72205	661-5171
FP	Kennedy, Charles H.	3115 JFK Boulevard, North Little Rock 72116	664-4161
PD	Kennedy, H. Frazier	500 South University, Little Rock 72205	753-9464
GS	Kilbury, Merlin J.	9712 Temple Road, Little Rock 72205	664-4117
PDA	Kittler, Fred J.	Post Office Box 5675, Little Rock 72215	661-0940
CD	Kizzlar, Jim C.	10001 Lile Drive, Little Rock 72205	227-5210
P	Koehler, Thomas R.	4313 West Markham, Little Rock 72201	227-8000
END	Kohler, Peter O.	4301 West Markham, Little Rock 72201	664-4500
AN	Kolb, Agnes C.	1150 Medical Towers Building, Little Rock 72205	661-5160
P	Kolb, W. Payton	230 Medical Towers Building, Little Rock 72205	227-7590
RD	Kozberg, Oscar	28 Kingsbridge Way, Little Rock 72212 (Res.)	225-0887
GYN	Kreth, Kay M.	417 North University, Little Rock 72205	225-7709
P	Krulin, Gregory S.	#1 St. Vincent Circle, Little Rock 72205	663-9441
RD	Krygier, Albin J.	306 Royal Drive, Horseshoe Bend 72512	664-1060
GS	Kumpuris, Frank G.	415 North University, Little Rock 72205	670-5865
OBG	Kwee, James J.	310 Doctors Park Building, Little Rock 72205	664-1521
OTO	Kyser, James F.	900 Medical Towers Building, Little Rock 72205	224-5500
OPH	Landers, James H.	500 South University, Little Rock 72205	227-8501
R	Lane, John W.	9601 Lile Drive, Little Rock 72205	664-1104
GS	Lang, Nicholas P.	4301 West Markham, Little Rock 72201	227-2771
R	Langston, Harold D.	Post Office Box 5668, Little Rock 72215	661-6184
FP	Laurenzana, Donald A.	3423 Pike Avenue, North Little Rock 72118	664-8573
RD	Lawson, Mason G.	200 Ridgeway, Little Rock 72205 (Res.)	753-3661
AN	Lawson, Noel W.	4301 West Markham, Slot 515, Little Rock 72201	663-4834
A	Lee, J. Fred	Post Office Drawer A, Little Rock 72205	661-6114
RHU	Leonard, Donald G.	#1 St. Vincent Circle, Little Rock 72205	664-3904
FP	Leonard, Garnett J.	3115 JFK Boulevard, North Little Rock 72116	664-2466
OBG	Leou, Frank J.	1070 Medical Towers Building, Little Rock 72205	753-9499
ORS	Lester, Joe K.	1518 Main, North Little Rock 72114	224-1080
PD	Levin, Frederick R.	500 South University, Little Rock 72205	375-0102
FP	Lewellen, John C.	8824 Chicot Road, Little Rock 72209	664-4044
CD	Lewis, W. Sexton	700 Medical Towers Building, Little Rock 72205	562-8600
**FP	Liem, Pham H.	4301 West Markham, Little Rock 72201	227-4434
**GS	Ligon, Ralph E.	4301 West Markham, Slot 520, Little Rock 72201	661-5000
R	Lile, Henry A.	1100 Medical Towers Building, Little Rock 72205	661-6173
TS	Lincoln, Ben M.	5326 West Markham, Little Rock 72205	227-5240
ORS	Lipke, Jay M.	601 North University, Little Rock 72205	664-6705
U	Logan, Charles W.	500 South University, Little Rock 72205	666-0144
ORS	Logue, Richard M.	601 North University, Little Rock 72205	664-4364
IM	Love, Tommy L., Jr.	#1 St. Vincent Circle, Little Rock 72205	666-0144
PD	Lowe, Betty A.	804 Wolfe Street, Little Rock 72201	664-5932
**	Lowry, Wade L.	4301 West Markham, Little Rock 72201	376-4621, Ext. 101
N	Lucy, Dennis D., Jr.	4301 West Markham, Little Rock 72201	661-5000
GS	Ludwig, Frank R.	406 West Pershing, North Little Rock 72114	661-5135
GS	Lyons, Virgle E., Jr.	500 South University, Little Rock 72205	758-1620
FP	Mallory, George L., Jr.	4511 Lynch Drive, North Little Rock 72117	664-2434
IM	Malott, Jerry D.	670 Medical Towers Building, Little Rock 72205	945-9271
PTH	Markland, Gary S.	9600 West 12th, Little Rock 72201	224-2424
**IM	Martin, Danny A.	4301 West Markham, Little Rock 72201	227-2888
PUD	Mason, William L.	500 South University, Little Rock 72205	661-5000
IM	Massey, C. Garnett	1120 Medical Towers Building, Little Rock 72205	661-9393
A	Matthews, Joe W.	Post Office Box 5675, Little Rock 72215	227-6770
P	Matthews, Robert R.	4301 West Markham, Slot 568, Little Rock 72201	227-5210
CD	Meacham, Donald F.	690 Medical Towers Building, Little Rock 72205	661-5903
AN	Means, Paul N.	1150 Medical Towers Building, Little Rock 72205	227-7596
IM	Metrailler, James A.	10121 North Rodney Parham, Little Rock 72207	227-7590
N	Miles, David A.	500 South University, Little Rock 72205	224-2525
ORS	Millard, Leighton	Post Office Box 5270, Little Rock 72215	664-3018
NEP	Miller, C. Lindsey	350 Medical Towers Building, Little Rock 72205	224-6900
FP	Miller, Forrest B., Jr.	3500 South University, Little Rock 72204	224-2141
IM	Miller, Raymond P., Sr.	5918 Lee, Little Rock 72205	562-4838
OBG	Miller, Timothy T.	4301 West Markham, Little Rock 72201	664-2500
OTO	Milner, E. L.	500 South University, Little Rock 72205	661-5921
ADM	Mitchell, George K.	Post Office Box 2181, Little Rock 72203	664-4318
N	Money, Wandal D.	2002 Fendley Drive, North Little Rock 72114	378-2133
D	Moore, Burton A.	500 South University, Little Rock 72205	753-5462
U	Moore, J. Malcolm	500 South University, Little Rock 72205	664-4161
GS	Moore, Rex N.	Post Office Box 459, Jacksonville 72076	664-4364
IM	Moore, Robert B.	5918 Lee, Little Rock 72205	982-2141
OBG	Morgan, Frank E.	410 West Pershing, North Little Rock 72114	664-2500
GS	Morris, W. Dale	8500 West Markham, Little Rock 72205	758-1022
IM	Morris, Woodbridge E.	5326 West Markham, Little Rock 72205	224-1950
R	Morrison, James R.	500 South University, Little Rock 72205	664-2111
ORS	Morrissy, Raymond T.	804 Wolfe Street, Little Rock 72202	664-3914
IM	Morse, Jim C.	500 South University, Little Rock 72205	376-4621
GE	Morton, William J.	10001 Lile Drive, Little Rock 72205	661-9740
ORS	Mulhollan, James S.	#1 St. Vincent Circle, Little Rock 72205	227-8000
GP	Murphy, James E.	1800 Maple, North Little Rock 72114	664-6334
P	Murphy, Randolph	4313 West Markham, Little Rock 72201	758-1640
R	McAdoo, Hosea W., Jr.	1100 Medical Towers Building, Little Rock 72205	664-4500
OBG	McCaskill, Melvin R.	500 South University, Little Rock 72205	227-2771
			664-4131



Type of Practice	Member's Name	Address	Telephone Number
		Post Office Box 5507, Little Rock 72215	664-2593
PTH	McConnell, John D.	Building, Little Rock 72205	227-8180
GS	McCracken, John D.	1000 Medical Towers Building, Little Rock 72205	982-4551
FP	McCrary, George A.	Post Office Box 805, Jacksonville 72076	664-4810
FP	McGowan, Robert J.	424 North University, Little Rock 72205	227-5050
OTO	McGrew, Robert N.	1200 Medical Towers Building, Little Rock 72205	664-4131
OBG	McKelvey, K. David	500 South University, Little Rock 72205	666-0251
ORS	McKenzie, Charles N.	802 North University, Little Rock 72205	227-5885
OBG	McKnight, C. Allen	800 Medical Towers Building, Little Rock 72205	224-2424
IM	McMillan, James A.	670 Medical Towers Building, Little Rock 72205	663-3783
RD	McMillin, Lamar Sr.	337 Crystal Court, Little Rock 72205 (Res.)	664-5750
GPM	McNair, James R.	500 South University, Little Rock 72205	375-2433
GP	Napper, George S.	513 Main, North Little Rock 72114	664-7710
ORS	Nasca, Richard J.	1100 North University, Little Rock 72207	664-3914
R	Nelson, Alvah J., III	500 South University, Little Rock 72205	661-5252
ORS	Nelson, Carl L.	4301 West Markham, Little Rock 72201	664-3914
R	Newbern, David H.	500 South University, Little Rock 72205	375-2252
RD	Nisbett, James M.	517 East 7th, Little Rock 72202 (Res.)	
#	Nixon, Ewing M.	Little Rock	664-4500
P	Nolen, Richard R.	4313 West Markham, Little Rock 72201	225-1860
R	Norton, Joseph A.	8570 Cantrell Road, Little Rock 72207 (Res.)	376-4511
PH	Oates, Gordon P.	1700 West 13th, Little Rock 72202	664-0769
GP	Ogden, Mahlon D.	4601 Woodlawn, Little Rock 72205	375-1116
**FP	Oglesby, Nita	1700 West 13th, Little Rock 72202	664-4500
P	Oglesby, Walter R.	4313 West Markham, Little Rock 72201	227-2672
ADM	O'Neal, Walter H.	9601 Interstate 630, Little Rock 72201	227-7200
GS	Osam, Patrick N.	320 Doctors Park Building, Little Rock 72205	227-8180
GS	Ozment, Kerry L.	1000 Medical Towers Building, Little Rock 72205	661-8534
PTH	Packmore, D. E.	#1 St. Vincent Circle, Little Rock 72205	312-664-4050
ADM	Padberg, Frank T.	55 East Erie, Chicago, Illinois 60611	664-2466
RHU	Papaioannou Christos C.	#1 St. Vincent Circle, Little Rock 72205	227-5050
OT	Pappas, James J.	1200 Medical Towers Building, Little Rock 72205	666-9632
OPH	Parker, J. Mayne	500 South University, Little Rock 72205	224-1950
GS	Parnell, Clifton L.	8500 West Markham, Little Rock 72205	664-4044
PD	Paulus, Thomas E.	500 South University, Little Rock 72205	227-4150
ORS	Peeples, Earl	110 Doctors Park Building, Little Rock 72205	
#	Pehrson, Nils C.	Little Rock	661-5800
P	Peters, John E.	4301 West Markham, Slot 589, Little Rock 72201	227-8000
END	Peters, Phillip J.	10001 Lile Drive, Little Rock 72205	661-5151
OPH	Petursson, Gissur J.	4301 West Markham, Little Rock 72201	376-2840
OPH	Phillips, Bert L.	1403 Main, North Little Rock 72114	374-4821
GS	Phipps, W. E., Jr.	Post Office Box 13, North Little Rock 72115	664-4321
GS	Pike, John D.	500 South University, Little Rock 72205	771-0300
IM	Pilcher, Michael T.	2500 McCain Boulevard, Suite 219, North Little Rock 72116	666-5962
AN	Pollard, Arlee E.	7400 Rockwood, Little Rock 72207 (Res.)	663-9352
RD	Pool, Chalmers S.	3925 North Lookout, Little Rock 72205 (Res.)	227-6464
PS	Pope, Norton A.	850 Medical Towers Building, Little Rock 72205	664-9082
OTO	Potts, Jerry L.	500 South University, Little Rock 72205	664-6980
GE	Power, Robert C.	409 North University, Little Rock 72205	664-3914
NM	Prather, Jerry L.	500 South University, Little Rock 72205	664-9535
CD	Price, Ben O.	500 South University, Little Rock 72205	375-3231
IM	Pringos, Andrew A.	102 National Old Line Building, Little Rock 72201	663-5269
RD	Proctor, Clark B.	63 Sherrill Heights, Little Rock 72202 (Res.)	562-1463
FP	Purdy, Harold D.	6924 Geyer Springs Road, Little Rock 72209	664-2500
IM	Fyle, Hoyte R., Jr.	5918 Lee, Little Rock 72205	753-5462
N	Ragsdill, Mary L.	2002 Fendley Drive, North Little Rock 72114	664-4500, Ext. 401
P	Rankin, Robert M.	4313 West Markham, Little Rock 72201	664-4161
D	Raque, Carl J.	500 South University, Little Rock 72205	227-8000
IM	Rasch, James R.	10001 Lile Drive, Little Rock 72205	372-8361
TS	Read, Raymond C.	300 East Roosevelt Road, Little Rock 72206	663-1570
RD	Reaves, B. James	4 Edgehill Road, Little Rock 72207 (Res.)	224-0110
PUD	Rector, Nancy F.	890 Medical Towers Building, Little Rock 72205	225-0880
NS	Reding, David L.	750 Medical Towers Building, Little Rock 72205	661-5240
U	Redman, John F.	4301 West Markham, Slot 540, Little Rock 72201	227-6377
OBG	Reed, Ewing C., Jr.	300 Doctors Park Building, Little Rock 72205	372-8361
IM	Reeder, Kathryn I.	300 East Roosevelt Road, Little Rock 72206	661-5266
P	Reese, William G.	4301 West Markham, Little Rock 72201	664-3914
R	Regnier, George G.	500 South University, Little Rock 72205	664-3914
R	Rhinehart, William J.	500 South University, Little Rock 72205	664-9040
CD	Richards, Mary K.	#1 St. Vincent Circle, Little Rock 72205	664-4321
GS	Richardson, Robert E.	500 South University, Little Rock 72205	562-8600
FP	Riddle, John F., Jr.	8824 Chicot Road, Little Rock 72209	375-3326
FP	Riegler, Nicholas W., Jr.	1024 Scott, Little Rock 72202	562-4838
FP	Riley, William H.	3500 South University, Little Rock 72204	661-5810
CHP	Ringdahl, Irving C.	4301 West Markham, Little Rock 72201	
#	Ritchie, Elmer J.	North Little Rock	374-6491
OPH	Roberson, Michael C.	623 Woodlane, Little Rock 72201	664-4131
OBG	Rodgers, C. Dudley	500 South University, Little Rock 72205	562-4838
FP	Rodgers, Charles H.	3500 South University, Little Rock 72204	663-7502
RD	Rodgers, Clyde D.	5223 Hawthorne Road, Little Rock 72207 (Res.)	664-2395
PTH	Roe, Rodney A.	500 South University, Little Rock 72205	661-0596
GYN	Roman, Juan J.	#1 St. Vincent Circle, Little Rock 72205	758-2046
ORS	Rooney, Thomas P.	501 West 25th, North Little Rock 72114	961-9228
RD	Rosenbaum, Carl A.	Route 1, Box 274, Scott 72142 (Res.)	664-8515
ORS	Ross, Ashley S.	500 South University, Little Rock 72205	664-8200
GYN	Ross, Robert W.	417 North University, Little Rock 72205	664-6600
HEM	Ross, S. William	#1 St. Vincent Circle, Little Rock 72205	661-6400
PTH	Roth, Sanford I.	4301 West Markham, Little Rock 72201	
	Rotherth, Frances C.	Guatemala City, Guatemala	664-9082
OTO	Rounsaville, Harry L.	500 South University, Little Rock 72205	227-6980
OPH	Roy, F. Hampton	970 Medical Towers Building, Little Rock 72205	661-5740
R	Rubin, Sanford A.	4301 West Markham, Little Rock 72201	758-6560
OTO	Ruggles, Dwayne L.	520 West 26th, North Little Rock 72114	227-4150
ORS	Runyan, W. A.	110 Doctors Park Building, Little Rock 72205	661-5371
FP	Saltzman, Ben N.	4301 West Markham, Slot 592, Little Rock 72201	664-6050
TS	Satterfield, John V.	500 South University, Little Rock 72205	758-1002
FP	Schratz, Bruce E.	1801 Maple, North Little Rock 72114	224-4484
OPH	Schroeder, George T.	260 Doctors Park Building, Little Rock 72205	227-8000
IM	Schultz, John C.	10001 Lile Drive, Little Rock 72205	227-7200
GS	Schwander, Howard	320 Doctors Park Building, Little Rock 72205	664-5354
OPH	Schwarz, W. J.	405 North University, Little Rock 72205	661-8539
PTH	Scott, Don I.	#1 St. Vincent Circle, Little Rock 72205	758-7627
OPH	Scruggs, Jan W.	312 West Pershing, North Little Rock 72114	376-4621
R	Seibert, Joanna	804 Wolfe Street, Little Rock 72202	



Type of Practice	Member's Name	Address	Telephone Number
ORS.	Selakovich, Walter G.	500 South University, Little Rock 72205.	
O8G.	Selby, Micheal L.	500 South University, Little Rock 72205.	666-2824
P.	Shannon, Robert F.	4301 West Markham, Little Rock 72201.	664-8003
**D.	Shields, Justin L.	4301 West Markham, Little Rock 72201.	661-5266
OPH.	Shock, John P.	4301 West Markham, Little Rock 72201.	661-5000
ORS.	Shuffield, H. Elvin.	110 Doctors Park Building, Little Rock 72205.	661-5150
IM.	Silvoso, Gerald R.	10001 Lile Drive, Little Rock 72205.	227-4150
O8G.	Simmons, Orman W.	310 Doctors Park Building, Little Rock 72205.	227-8000
IM.	Simpson, N. Henry.	441 Donaghey Building, Little Rock 72201.	224-5500
P.	Sims, James M.	324 West Pershing, North Little Rock 72114.	375-2801
PD.	Sims, Neil H.	4301 West Markham, Little Rock 72201.	753-5180
PTH.	Singleton, L. Gene.	9601 Interstate 630, Little Rock 72205.	661-5262
GS.	Sipes, Frank M.	403 Donaghey Building, Little Rock 72201.	227-2868
**PD.	Skaug, Warren A.	4301 West Markham, Little Rock 72201.	375-5543
ORS.	Slater, John G.	1100 North University, Little Rock 72207.	661-5000
PTH.	Slaven, John E.	9600 West 12th, Little Rock 72201.	664-7710
R.	Slayden, John E.	4301 West Markham, Little Rock 72201.	227-2888
AN.	Sloan, Fay B.	1150 Medical Towers Building, Little Rock 72205.	661-5760
GYN.	Sloan, James M.	500 South University, Little Rock 72205.	227-7590
GE.	Smart, Douglas F.	409 North University, Little Rock 72205.	664-2277
P.	Smith, Aubrey C.	12115 Hinson Road, Little Rock 72212.	664-6980
CD.	Smith, David E.	360 Doctors Park Building, Little Rock 72205.	227-0680
**PTH.	Smith, Deborah A.	4301 West Markham, Little Rock 72201.	224-6525
O8G.	Smith, Douglas B.	310 Doctors Park Building, Little Rock 72205.	661-5000
GP.	Smith, Huie H.	Benton Services Center Nursing Home, Benton 72158.	224-5500
OPH.	Smith, James L.	623 Woodlane, Little Rock 72201.	778-1111, Ext. 307
OPH.	Smith, Joe E.	7107 West 12th, Little Rock 72204.	374-6491
FP.	Smith, John McCollough.	4000 Woodlawn, Little Rock 72205.	666-8627
GYN.	Smith, Mose, III.	5326 West Markham, Little Rock 72205.	666-6570
R.	Smith, Phillip L.	4301 West Markham, Little Rock 72201.	664-1527
A.	Smith, Purcell, Jr.	Post Office Box 5675, Little Rock 72215.	661-5740
GE.	Smith, Thomas J.	409 North University, Little Rock 72205.	227-5210
PD.	Smith, Thomas W.	500 South University, Little Rock 72205.	664-6980
OTO.	Smith, Tom.	330 Medical Towers Building, Little Rock 72205.	664-4117
RD.	Snodgrass, William A., Jr.	3850 B. Rue Maison, Mobile, Alabama 36608 (Res.)	227-4863
ORS.	Sorrells, R. Barry.	Post Office Box 5270, Little Rock 72215.	205-342-4845
RD.	Spitzberg, Irving J.	307 North Cedar, Little Rock 72205 (Res.)	224-6900
PUD.	Squire, Arthur E., Jr.	10001 Lile Drive, Little Rock 72205.	663-6877
GS.	Stainton, Robert M.	300 East Roosevelt Road, Little Rock 72206.	227-8000
U.	Stallings, Walt.	500 South University, Little Rock 72205.	372-8361
IM.	Stanley, Joe P.	Pike Plaza Center, North Little Rock 72114.	664-0651
**PD.	Stansell, Phyllis E.	4301 West Markham, Little Rock 72201.	758-9823
ORS.	Steele, William L.	1100 North University, Little Rock 72207.	661-5060
IM.	Steinkamp, Ruth C.	409 Fairfax, Little Rock 72205 (Res.)	664-7710
ONC.	Sternberg, Jack J.	500 South University, Little Rock 72205.	663-5287
**GS.	Stevenson, Dick.	4301 West Markham, Little Rock 72201.	661-0060
TS.	Stewart, Bill D.	415 North University, Little Rock 72205.	661-5000
FP.	Stotts, John R.	Post Office Box 7219, Little Rock 72217.	664-1521
CD.	Stout, Kimber M.	2500 McCain Place, North Little Rock 72116.	663-9415
FP.	Strauss, Alvin W., Jr.	1026 Donaghey Building, Little Rock 72201.	771-0300
IM.	Strauss, Mark A.	1026 Donaghey Building, Little Rock 72201.	372-1828
PD.	Stroope, George F.	516 West Pershing, North Little Rock 72114.	372-1828
O8G.	Struble, R. Harlan.	270 Medical Towers Building, Little Rock 72205.	758-1530
PS.	Stuckey, James G.	500 South University, Little Rock 72205.	224-6300
O8G.	Studdard, James D.	310 Doctors Park Building, Little Rock 72205.	664-4383
OTO.	Suen, James Y.	4301 West Markham, Little Rock 72201.	224-5500
U.	Suliman, J. Samir.	518 West 26th, North Little Rock 72114.	661-5140
PTH.	Sullivan, Charles D.	9600 West 12th, Little Rock 72205.	758-6111
P.	Sundermann, Richard H.	Veterans Administration Hospital, North Little Rock 72114.	227-2888
PH.	Swindoll, Bryant S.	2800 Willow Street, North Little Rock 72114.	372-8361
O8G.	Talley, H. Aubry.	500 South University, Little Rock 72205.	758-1540
IM.	Taylor, Eugene H.	10001 Lile Drive, Little Rock 72205.	664-4131
CRS.	Tedford, John G.	500 South University, Little Rock 72205.	227-8000
PD.	Teeter, John A.	500 South University, Little Rock 72205.	664-8466
IM.	Texter, E. Clinton, Jr.	4301 West Markham, Little Rock 72201.	664-4117
OPH.	Thomas, A. Henry.	500 South University, Little Rock 72205.	661-5177
ORS.	Thomas, Jerry L.	#1 St. Vincent Circle, Little Rock 72205.	664-8445
GS.	Thomas, Peter O.	1310 Cantrell Road, Little Rock 72201.	661-0350
CD.	Thompson, A. J.	#1 St. Vincent Circle, Little Rock 72205.	374-5703
OTO.	Thompson, Albert R.	500 South University, Little Rock 72205.	664-5860
GS.	Thompson, Bernard W.	300 East Roosevelt Road, Little Rock 72206.	664-4381
AN.	Thompson, Dola S.	4301 West Markham, Little Rock 72201.	372-8361
P.	Thompson, Robert M.	819 University Tower Building, Little Rock 72204.	661-6114
ORS.	Thompson, Samuel B.	1100 North University, Little Rock 72207.	664-2444
ADM.	Thorn, G. Max.	St. Vincent Infirmary, Little Rock 72201.	664-7710
CD.	Ticaric, Stephen T.	#1 St. Vincent Circle, Little Rock 72205.	661-3154
FP.	Tilley, Steve B.	Post Office Box 7219, Little Rock 72217.	664-9040
R.	Tirman, Robert M.	4301 West Markham, Little Rock 72201.	663-9415
IM.	Tolbert, Louis E., Jr.	500 South University, Little Rock 72205.	661-5740
ADM.	Towbin, Eugene J.	300 East Roosevelt Road, Little Rock 72206.	666-0136
FP.	Tracy, Phillip A.	Post Office Box 459, Jacksonville 72076.	372-8361, Ext. 1291
CDS.	Trumbull, Horace R.	4301 West Markham, Little Rock 72201.	982-2141
GP.	Trussell, Thomas W.	5326 West Markham, Little Rock 72205.	661-6175
AN.	Tseng, Jyi-Ming.	1150 Medical Towers Building, Little Rock 72205.	663-4114
AN.	Valentine, Robert G.	2800 Percy Machin Drive, North Little Rock 72114.	227-7590
AN.	Vaughter, W. Roger.	3 Ken Circle, Little Rock 72207 (Res.)	758-4806
GP.	Wade, William I.	424 North University, Little Rock 72205.	664-3789
IM.	Wagoner, Jack.	5918 Lee, Little Rock 72205.	664-4810
RD.	Wallis, Charles.	5909 Country Club, Little Rock 72207 (Res.)	664-2500
GS.	Walt, James R.	500 South University, Little Rock 72205.	663-2132
AN.	Wang, Jerry S. Y.	13701 Rivercrest Drive, Little Rock 72212 (Res.)	664-4146
AN.	Ward, Joseph P.	1150 Medical Towers Building, Little Rock 72205.	227-6106
PD.	Warford, Lloyd R.	500 South University, Little Rock 72205.	227-7590
P.	Warford, Walton R.	3737 Lakeshore Drive, North Little Rock 72116 (Res.)	664-4044
OPH.	Watkins, John G., Jr.	230 Doctors Park Building, Little Rock 72205.	753-4193
OPH.	Watkins, John G., III.	230 Doctors Park Building, Little Rock 72205.	227-6797
IM.	Watkins, Larry S.	500 South University, Little Rock 72205.	227-6797
NS.	Watson, Robert.	750 Medical Towers Building, Little Rock 72205.	661-9740
ORS.	Weber, Edward R.	4301 West Markham, Little Rock 72201.	225-0880
FP.	Weber, James R.	Post Office Box 188, Jacksonville 72076.	661-5252
CDS.	Weiss, John B.	780 Medical Towers Building, Little Rock 72205.	982-2108
NEP.	Wellons, James A., Jr.	350 Medical Towers Building, Little Rock 72205.	224-1508
IM.	Wells, Travis L.	216 Donaghey Building, Little Rock 72201.	224-2141
			375-7121



Type of Practice	Member's Name	Address	Telephone Number
		330 Doctors Park Building, Little Rock 72205	227-6363
GS	Wenger, Carl E.	4301 West Markham, Little Rock 72201	661-5987
GS	Westbrook, Kent C.	230 Medical Towers Building, Little Rock 72205	225-0777
P	Westerfield, Frank M., Jr.	4301 West Markham, Little Rock 72201	661-5171
PTH	Wetzel, William J.	908 High, Little Rock 72202	374-3609
FP	White, Oba B.	Albany, Georgia	225-1252
	White, Paul C., Jr.	3 Wingate Drive, Little Rock 72205 (Res.)	663-4114
RD	Wilbur, E. Lloyd	5322 West Markham, Little Rock 72205	224-5666
GP	Wilkes, Elbert H.	200 Medical Towers Building, Little Rock 72205	661-6175
CDS	Williams, C. David	4301 West Markham, Little Rock 72201	225-0880
CDS	Williams, G. Doyne	750 Medical Towers Building, Little Rock 72205	664-9040
NS	Williams, Ronald N.	#1 St. Vincent Circle, Little Rock 72205	666-0144
CD	Wilson, James W.	601 North University, Little Rock 72205	664-1104
ORS	Wilson, John L.	500 South University, Little Rock 72205	771-0300
OPH	Wilson, R. Sloan	2500 McCain Place, North Little Rock 72116	227-6659
IM	Wilson, T. Ben	240 Doctors Park Building, Little Rock 72205	664-6127
IM	Winn, Charles R., Jr.	500 South University, Little Rock 72205	982-2141
GYN	Wood, Gary P.	Post Office Box 459, Jacksonville 72076	661-5387
FP	Wortham, Thomas H.	4301 West Markham, Slot 518, Little Rock 72201	227-2888
O8G	Wynn, Ralph M.	9600 West 12th, Little Rock 72201	758-1310
PTH	Young, Douglas E.	410 West 26th, North Little Rock 72114	842-2216
U	Young, Jerry M.	Star Route, Box 201-A, Tucker 72168 (Res.)	
RD	Zell, Lawrence M.		
<b>RANDOLPH COUNTY</b>			
		110 West Broadway, Pocahontas 72455	892-4467
FP	Baltz, Albert L.	110 West Broadway, Pocahontas 72455	892-3111
FP	Baltz, M. A.	Post Office Box 585, Pocahontas 72455	892-3371
FP	Barre, Hal S.	204 Thomasville, Pocahontas 72455	892-3344
GP	DeClerk, Thomas B.	Route 4, Highway 90, Pocahontas 72455	892-4464
FP	Lombardo, Richard J.	107 Van Bibber, Pocahontas 72455	892-3389
GP	Smith, Norman K.		
<b>SALINE COUNTY</b>			
		302 West South, Benton 72015	778-4511
GP	Ashby, John W.	1215 North Main, Benton 72015	778-6555
R	Ashby, Robert M.	105 McNeil, Benton 72015	778-7435
GS	Baber, Quin M.	300 East Roosevelt Road, Little Rock 72206	372-8361, Ext. 300
OM	Bethel, James C.	901 Misty Drive, Benton 72015 (Res.)	776-1231
RD	Bryan, H. David	105 McNeil, Benton 72015	778-1388
ORS	Cash, Ralph D.	Benton Services Center, Building 6, Benton 72158	371-1906
PM	Coker, S. D.	Route 3, Box 225, Benton 72015	778-1111, Ext. 488
PM	Cornwell, Samuel L.	910 North East, Benton 72015	778-0426
O8G	Council, R. A., Jr.	105 McNeil, Benton 72015	778-1388
ORS	Duncan, J. Shelby	18101 Fawn Tree Drive, Little Rock 72209 (Res.)	455-1315
GP	Edmiston, Frank G.	Post Office Box 97, Bauxite 72011	557-5421, Ext. 230
OM	Frاندولig, John E.	Post Office Box 307, Benton 72015	778-4511
GP	Hogue, F. Paul	205 West Carpenter, Benton 72015	778-8264
FP	Hood, C. Ted	Post Office Box AA, Bryant 72022	847-0289
FP	Izard, Ralph S.	225 South Market, Benton 72015	778-2722
GP	Jones, Curtis W., Sr.	205 West Carpenter, Benton 72015	778-8264
FP	Kirk, Marvin N.	302 West South, Benton 72015	778-4511
GP	Martindale, J. L.	Benton Services Center, Benton 72158	778-1111
P	Mizell, Walter S.	Post Office Box 908, Benton 72015	778-0421
PD	McClard, Helen P.	San Antonio, Texas	
	McNichol, Ronald W.	910 North East, Benton 72015	776-0052
AN	Porter, Jim C.	Post Office Box 300, Bauxite 72011	778-3644
OM	Ramsay, Rex C., Jr.	205 West Carpenter, Benton 72015	778-8264
FP	Stewart, David L.	205 West Carpenter, Benton 72015	847-2719
FP	Taggart, S. D.	910 North East, Benton 72015	778-0426
O8G	Thibault, Frank G., Jr.	Benton Services Center, Benton 72158	778-1111
P	Thompson, John P.	302 West South, Benton 72015	778-4511
GP	Thorn, H. B., Jr.	105 McNeil, Benton 72015	778-7435
GS	Viner, Donald L.	321 Short, Benton 72015	776-0603
FP	Wright, John D.		
<b>SCOTT COUNTY</b>			
		Post Office Box 249, Waldron 72958	637-3111
GP	Wright, Harold B.		
<b>SEBASTIAN COUNTY</b>			
		500 South 16th, Fort Smith 72901	783-1085
PD	Aclin, Richard R.	1100 Murta Road, Van Buren 72956 (Res.)	474-8668
RD	Adams, William F.	300 North Greenwood, Fort Smith 72901	783-5970
ORS	Alberty, Joe Paul	1311 South "I", Fort Smith 72901	441-4381
EM	Alexander, R. Kent	320 North Greenwood, Fort Smith 72901	782-4066
GS	Anderson, Paul M.	1500 Dodson, Fort Smith 72901	782-2071
O8G	Atkins, Jimmie G.	Post Office Box 426, Greenwood 72936	996-4111
GP	Bailey, Charles W.	2112 South Greenwood, Fort Smith 72901	785-2361
P	Baker, Max A.	1500 Dodson, Fort Smith 72901	782-2071
IM	Barker, Robert C., Jr.	Post Office Box 3528, Fort Smith 72913	452-2077
HEM	Barnes, L. Ford	Mount Clemens, Michigan	
	Bird, Carolyn W.	1500 Dodson, Fort Smith 72901	782-2071
GE	Bordeaux, Ronald A.	Post Office Box 3528, Fort Smith 72913	452-2077
D	Bradford, A. C.	1500 Dodson, Fort Smith 72901	782-2071
R	Broadwater, John R.	100 North 16th, Fort Smith 72901	783-3604
ORS	Brown, Byron L.	6810 South "T", Fort Smith 72903 (Res.)	452-1231
RD	Brown, James A.	1500 Dodson, Fort Smith 72901	782-2071
ORS	Buie, James H.	100 South 14th, Fort Smith 72901	785-2431
FP	Busby, J. David	312 South 16th, Fort Smith 72901	782-7921
PD	Cabell, Ben B.	Post Office Box 1612, Fort Smith 72902	782-5035
R	Cassady, Calvin R.	1500 Dodson, Fort Smith 72901	782-2071
P	Chambers, A. Pat	1500 Dodson, Fort Smith 72901	782-2071
P	Chambers, Donald S.	1500 Dodson, Fort Smith 72901	782-2071
AN	Chamblin, Don W.	522 South 16th, Fort Smith 72901	785-1413
TS	Clemmons, Edward E.	1500 Dodson, Fort Smith 72901	782-2071
AN	Coffman, Edwin L.	1500 Dodson, Fort Smith 72901	782-2071
NEP	Coleman, Michael D.	1500 Dodson, Fort Smith 72901	782-2071
CRS	Crigler, Ralph E.	Post Office Box 1612, Fort Smith 72902	783-6174
R	Crow, Neil E., Sr.	318 North Greenwood, Fort Smith 72901	785-1447
R	Culp, William C.	922 Lexington, Fort Smith 72901	782-2071
PTH	Davenport, Leo	1500 Dodson, Fort Smith 72901	
CD	Deaton, John M.	Shreveport, Louisiana	
	DeGueurce, James C., III	1500 Dodson, Fort Smith 72901	782-2071
P	Dorzab, Joe H.	1500 Dodson, Fort Smith 72901	782-2071
NS	Dulligan, Michael P.	1500 Dodson, Fort Smith 72901	782-2071
IM	Edmondson, Steve	Post Office Box 3507, Fort Smith 72913	785-2411
O8G	Ellis, Homer G.		

Type of Practice	Member's Name	Address	Telephone Number
R	Erickson, Clark A.	1500 Dodson, Fort Smith 72901	782-2071
OPH	Faier, Samuel Z.	1500 Dodson, Fort Smith 72901	782-2071
HEM	Fecher, Dennis R.	1500 Dodson, Fort Smith 72901	782-2071
U	Feder, Frederick P.	520 Lexington, Fort Smith 72901	782-7261
FP	Feild, T. A., III	3600 North "O", Fort Smith 72904	783-5158
OPH	Felker, Gary V.	3000 Rogers, Fort Smith 72901	782-8892
AN	Fisher, Robert D.	1500 Dodson, Fort Smith 72901	782-2071
PD	Floyd, Charles H.	617 South 16th, Fort Smith 72901	783-3166
U	Francis, Darryl R., II	520 Lexington, Fort Smith 72901	782-7261
OTO	Gedosh, Edgar A.	600 South 16th, Fort Smith 72901	782-6022
R	Gill, James A.	1500 Dodson, Fort Smith 72901	782-2071
CD	Gilliland, J. Campbell	1500 Dodson, Fort Smith 72901	782-2071
PTH	Girkin, R. Gene	922 Lexington, Fort Smith 72901	785-1447
OBG	Glover, D. Bruce	Post Office Box 3507, Fort Smith 72913	785-2411
RD	Goldstein, Davis W.	7809 Horan Drive, Fort Smith 72903 (Res.)	452-4900
PS	Goodman, R. Cole	1500 Dodson, Fort Smith 72901	782-2071
AN	Goodman, Raymond C.	1500 Dodson, Fort Smith 72901	782-2071
EM	Graves, Stephen C.	7301 Rogers, Fort Smith 72903	452-5100
N	Griggs, William L., III	1500 Dodson, Fort Smith 72901	782-2071
U	Hamblin, David W.	3104 Executive Park Drive, Fort Smith 72903	452-8400
ORS	Hathcock, Alfred B.	1500 Dodson, Fort Smith 72901	782-2071
GS	Hawkins, S. Wright	Post Office Box 3528, Fort Smith 72913	452-2077
U	Hewett, Archie L.	600 South 14th, Fort Smith 72901	785-2604
OBG	Hoffman, John D.	Post Office Box 3528, Fort Smith 72913	452-2077
GS	Hoge, Marlin B.	320 North Greenwood, Fort Smith 72901	782-4066
OBG	Holman, James F.	Post Office Box 3528, Fort Smith 72913	452-2077
IM	Holman, William A.	Post Office Box 3528, Fort Smith 72913	452-2077
GS	Holmes, Williams C., Jr.	Post Office Box 3528, Fort Smith 72913	452-2077
ADM	Hornberger, Evans Z., Jr.	1311 South "I", Fort Smith 72901	441-5440
A	Howell, James T.	1420 South "I", Fort Smith 72901	782-2983
OPH	Hughes, Robert P., Jr.	3000 Rogers, Fort Smith 72901	782-8892
R	Huskison, William T.	318 North Greenwood, Fort Smith 72901	783-6174
GYN	Hyde, Marshall L.	Post Office Box 3507, Fort Smith 72913	785-2411
FP	Ingram, Ralph N.	1120 Lexington, Fort Smith 72901	785-2655
ORS	Irwin, Peter J.	1500 Dodson, Fort Smith 72901	782-2071
GS	Janes, Robert H.	1500 Dodson, Fort Smith 72901	782-2071
EM	Jones, W. Duane	1311 South "I", Fort Smith 72901	441-5011
GYN	Kelsey, J. F.	Post Office Box 3507, Fort Smith 72913	785-2411
RD	Kennedy, Virgil N.	5417 Grand Avenue, Fort Smith 72904 (Res.)	452-3351
IM	Kientz, John L. B., Jr.	1500 Dodson, Fort Smith 72901	782-2071
CD	Klopfenstein, Keith	1500 Dodson, Fort Smith 72901	782-2071
ORS	Knight, W. E.	1500 Dodson, Fort Smith 72901	782-2071
END	Kocher, David B.	Post Office Box 3528, Fort Smith 72913	452-2077
PTH	Koenig, Albert S., Jr.	922 Lexington, Fort Smith 72901	785-1447
PTH	Koenig, A. Samuel, III	922 Lexington, Fort Smith 72901	785-1447
GYN	Kradel, R. Paul	Post Office Box 3528, Fort Smith 72913	452-2077
FP	Kramer, Ralph G.	603 Lexington, Fort Smith 72901	783-8917
RD	Krock, Fred H.	3700 Free Ferry Road, Fort Smith 72903 (Res.)	783-4832
FP	Kutait, Kemal E.	1120 Lexington, Fort Smith 72901	785-2655
IM	Lambiotte, Louis O.	1500 Dodson, Fort Smith 72901	782-2071
PTH	Landrum, Annette V.	Post Office Box 1684, Fort Smith 72902	782-4983
GS	Landrum, Samuel E.	522 South 16th, Fort Smith 72901	785-4181
OTO	Lane, Charles S., Jr.	600 South 16th, Fort Smith 72901	782-6022
AN	Lenington, Jerry O.	1500 Dodson, Fort Smith 72901	782-2071
IM	Lewing, Hugh S.	Post Office Box 3006, Fort Smith 72913	783-3158
D	Lewis, John E.	1500 Dodson, Fort Smith 72901	782-2071
FP	Lilly, Ken E.	1120 Lexington, Fort Smith 72901	785-2655
NS	Lockhart, William G.	1500 Dodson, Fort Smith 72901	782-2071
GS	Lockwood, Frank M.	1500 Dodson, Fort Smith 72901	782-2071
ORS	Long James W.	1500 Dodson, Fort Smith 72901	782-2071
NS	MacDade, Albert D.	1500 Dodson, Fort Smith 72901	782-2071
D	Magness, Jack L., Jr.	Post Office Box 3528, Fort Smith 72913	452-2077
IM	Martin, Art B.	1500 Dodson, Fort Smith 72901	782-2071
FP	Martin, M. C. (Rick)	Post Office Box 366, Greenwood 72936	996-4112
OBG	Mason, Joe N.	1500 Dodson, Fort Smith 72901	782-2071
GE	Masri, Hassan M.	1500 Dodson, Fort Smith 72901	782-2071
GP	Meador, Don M.	3600 North "O", Fort Smith 72904	783-5158
R	Mendelsohn, E. A.	1500 Dodson, Fort Smith 72901	782-2071
R	Miller, Robert C.	1500 Dodson, Fort Smith 72901	782-2071
GS	Mings, Harold H.	1500 Dodson, Fort Smith 72901	782-2071
OPH	Moulton, Everett C., Jr.	3000 Rogers, Fort Smith 72901	782-8892
ORS	Mumme, Marvin E., Jr.	1500 Dodson, Fort Smith 72901	782-2071
RD	Murchison, Roary A.	19 Haven Drive, Fort Smith 72903 (Res.)	782-5323
PD	McClain, Merle E.	312 South 16th, Fort Smith 72901	782-7921
GP	McDonald, H. P.	2044 North 29th, Fort Smith 72904	782-4833
OPH	McEwen, Stanley R.	3000 Rogers, Fort Smith 72901	782-8892
FP	McKinney, Robert D.	Post Office Box 426, Greenwood 72936	996-4111
IM	McMinimy, D. J.	1500 Dodson, Fort Smith 72901	782-2071
IM	Nichols, David R.	1500 Dodson, Fort Smith 72901	782-2071
D	Niemann, Jeffrey M.	316 Lexington, Fort Smith 72901	783-1121
GS	Olson, John D.	1500 Dodson, Fort Smith 72901	782-2071
GE	Paris, Charles H.	Post Office Box 3528, Fort Smith 72913	452-2077
PD	Parker, Joel E., Jr.	617 South 16th, Fort Smith 72901	783-3165
R	Parker, Thomas G.	318 North Greenwood, Fort Smith 72901	783-6174
GP	Parta, H. John	3120 Jenny Lind, Fort Smith 72901	782-4986
CDS	Patrick, Donald L.	1500 Dodson, Fort Smith 72901	782-2071
IM	Pence, Eldon D., Jr.	314 North Greenwood, Fort Smith 72901	782-3001
GYN	Phillips, W. P.	Post Office Box 3507, Fort Smith 72913	785-2411
FP	Pillstrom, Lawrence G.	1120 Lexington, Fort Smith 72901	785-2655
IM	Poe, McDonald, Jr.	314 North Greenwood, Fort Smith 72901	782-3004
CD	Pope, J. R.	1500 Dodson, Fort Smith 72901	782-2071
PD	Post, James M.	617 South 16th, Fort Smith 72901	783-3165
IM	Pradel, Paul A.	314 North Greenwood, Fort Smith 72901	782-3001
CD	Prewitt, Taylor A.	Post Office Box 3528, Fort Smith 72913	452-2077
IM	Price, Lawrence C.	Post Office Box 3006, Fort Smith 72913	783-3158
OTO	Raymond, Thomas H.	600 South 16th, Fort Smith 72901	782-6022
N	Reul, Charles G.	1500 Dodson, Fort Smith 72901	782-2071
EM	Reyenga, Stanley L.	1311 South "I", Fort Smith 72901	441-5011
R	Rogers, Paul L.	318 North Greenwood, Fort Smith 72901	783-6174
FP	Ross, R. Wendell	1120 Lexington, Fort Smith 72901	785-2655
R	Russell, Rex D.	1500 Dodson, Fort Smith 72901	782-2071
AN	Safraneck, Edward J.	216-A North Greenwood, Fort Smith 72901	783-1497



Type of Practice	Member's Name	Address	Telephone Number
		1500 Dodson, Fort Smith 72901	782-2071
GS	Saviers, Boyd M.	216-A North Greenwood, Fort Smith 72901	783-1497
AN	Schemel, William H.	54 Haven Drive, Fort Smith 72903 (Res.)	782-4479
RD	Schirmer, Roy E.	404 South 16th, Fort Smith 72901	783-3159
IM	Schwarz, Paul R.	1500 Dodson, Fort Smith 72901	782-2071
N	Serrano, Ernest	Post Office Box 3507, Fort Smith 72913	785-2411
GYN	Sherman, Robert L.	1500 Dodson, Fort Smith 72901	782-2071
ORS	Sherrill, William M., Jr.	1500 Dodson, Fort Smith 72901	782-2071
ORS	Skagerberg, David G.	922 Lexington, Fort Smith 72901	785-1447
PTH	Smith, Kent	1500 Dodson, Fort Smith 72901	782-2071
R	Snider, James R.	1500 Dodson, Fort Smith 72901	782-2071
IM	Staggs, J. David	300 North Greenwood, Fort Smith 72901	783-0225
ORS	Stanton, William B.	Post Office Box 3528, Fort Smith 72913	452-2077
PUD	Stewart, Jerry R.	603 Lexington, Fort Smith 72901	783-8917
GP	Stewart, J. B.	1500 Dodson, Fort Smith 72901	782-2071
PS	Still, Eugene F., II	302 North 13th, Fort Smith 72901	785-2425
FP	Swena, Richard R.	1500 Dodson, Fort Smith 72901	782-2071
O&G	Tate, William B.	605 Lexington, Fort Smith 72901	782-6081
GP	Thompson, James B.	3804 Free Ferry Road, Fort Smith 72903 (Res.)	783-5711
RD	Thompson, J. Kenneth	605 Lexington, Fort Smith 72901	782-6081
GP	Thompson, Robert J.	1500 Dodson, Fort Smith 72901	782-2071
IM	Turner, William F.	Post Office Box 3528, Fort Smith 72913	452-2077
D	Vanderpool, Roy E.	Post Office Box 296, Huntington 72940	928-4404
FP	Venturina, Arturo P.	1500 Dodson, Fort Smith 72901	782-2071
U	Wahman, Gerald E.	3000 Rogers, Fort Smith 72901	782-8892
OPH	Wallace, Kenneth K.	617 South 16th, Fort Smith 72901	783-1085
PD	Walling, Robert V.	500 South 16th, Fort Smith 72901	785-2616
PD	Watts, John C.	912 Lexington, Fort Smith 72913	452-2077
GS	Weisse, John J.	Post Office Box 3528, Fort Smith 72913	441-5011
HEM	Wells, John D.	1311 South "I", Fort Smith 72901	782-2071
EM	Westbrook, Michael R.	1500 Dodson, Fort Smith 72901	452-2077
AN	Westermann, Norman F.	Post Office Box 3528, Fort Smith 72913	782-4929
IM	Whetsell, D. Wayne	1823 Dodson, Fort Smith 72901	783-3126
GYN	Whitaker, T. J., Jr.	2702 Barry, Fort Smith 72901	782-9437
IM	White, J. Earle	2300 South "T", Fort Smith 72901 (Res.)	783-0226
RD	Whittaker, L. A.	300 North Greenwood, Fort Smith 72901	782-2071
ORS	Wideman, John W.	1500 Dodson, Fort Smith 72901	785-1413
GS	Wikman, John H.	522 South 16th, Fort Smith 72901	785-2431
CDS	Williams, Carl L.	100 South 14th, Fort Smith 72901	782-2071
FP	Williams, John R.	1500 Dodson, Fort Smith 72901	782-6022
CD	Williams, Thomas N.	600 South 16th, Fort Smith 72901	782-2071
OTO	Wills, Paul I.	1500 Dodson, Fort Smith 72901	782-2071
U	Wilson, Carl L.	1500 Dodson, Fort Smith 72901	782-2071
U	Wilson, Morton C.	1500 Dodson, Fort Smith 72901	452-2077
U	Wilson, Steven K.	Post Office Box 3528, Fort Smith 72913	782-2071
GE	Wooddell, W. Jeff	1500 Dodson, Fort Smith 72901	783-6174
CDS	Woods, Leon P.	318 North Greenwood, Fort Smith 72901	
R	Worrell, John A.		

#### SEVIER COUNTY

		Post Office Box 68, DeQueen 71832	584-3520
GS	8alch, James I.	Post Office Box 890, DeQueen 71832	584-2465
GP	Brown, Olie D.	Post Office Box 391, DeQueen 71832	584-2022
GP	Buffington, Mike	North 4th and Heynecker Streets, DeQueen 71832	584-2840
FP	Carlson, Kevin R.	Highway 70 West, DeQueen 71832	584-2022
FP	Daniel, J. Frank	Post Office Box 930, DeQueen 71832	584-2022
FP	Dickinson, G. Wallace	Post Office Box 312, DeQueen 71832	584-7111
PTH	Dodd, Nathan L.	Post Office Box 391, DeQueen 71832	584-2022
FP	Jones, Charles N.	Town North Professional Building, DeQueen 71832	584-7112
GS	Norwood, William L.	Post Office Drawer 890, DeQueen 71832	584-2465
GP	Pierce, Joseph B.	300 East Roosevelt Road, Little Rock 72206	372-8361, Ext. 7762
GP	Pullen, Wayne G.	North 4th and Heynecker Streets, DeQueen 71832	584-2840
FP	Ridlon, Richard S.	Highway 70 West, DeQueen 71832	584-4638
R	Williams, W. Curtis		

#### ST. FRANCIS COUNTY

		Post Office Box 667, Hughes 72348 (Res.)	339-2398
RD	Chaffin, E. J.	Post Office Box 4000, Forrest City 72335	633-1425
FP	Cogburn, Harold N.	Post Office Box 989, Forrest City 72335	633-1952
GP	Collins, E. Morgan, Jr.	Post Office Box 577, Hughes 72348	339-2111
GP	Collum, Grady R.	Post Office Box 4000, Forrest City 72335	633-1421
FP	Crawley, Charles E.	Post Office Box 735, Hughes 72348	339-2373
GP	Fong, Fun H.	Post Office Box 4000, Forrest City 72335	633-1425
FP	Hammons, Edward P.	Post Office Box 4000, Forrest City 72335	633-1425
IM	Hawley, Brian	Forrest City	633-4711
#	Hollis, Herbert H.	1740 Lindauer, Forrest City 72335	633-1952
GP	Laney, J. Neal	Post Office Box 989, Forrest City 72335	633-1425
GP	McPhail, George T.	Post Office Box 4000, Forrest City 72335	
FP	Sexton, Giles A.		

#### UNION COUNTY

		209 Thompson, El Dorado 71730	862-4994
PD	Baldwin, Ronald L.	619 North Newton, El Dorado 71730	862-5439
U	Bowman, Raymond N.	516 West Faulkner, El Dorado 71730	863-6123
ORS	Callaway, James C.	416 North Newton, El Dorado 71730	862-5573
FP	Carroll, Peter J.	460 West Oak, El Dorado 71730	863-8116
GP	Clowney, A. R.	519 West Faulkner, El Dorado 71730	862-3471
OTO	Cyphers, Charles D.	Post Office Box 538, Hampton 71744	798-4272
GER	Dunn, Tom L.	443 West Oak, El Dorado 71730	862-1351
PTH	Duzan, Kenneth R.	443 West Oak, El Dorado 71730	862-1351
PTH	Elliott, Wayne G.	Post Office Box 1957, El Dorado 71730	863-2381
IM	Ellis, Jacob P.	38 Meadow Brook Drive, Conway 72032 (Res.)	329-3230
RD	Fitch, Leston E.	715 North College, El Dorado 71730	862-7921
P	Fraser, David B.	516 West Faulkner, El Dorado 71730	863-6123
ORS	Giller, W. John, Jr.	490 West Faulkner, El Dorado 71730	863-2286
IM	Gray, Carlos E.	714 West Faulkner, El Dorado 71730	862-5184
IM	Hardin, Alvin S.	425 West Oak, El Dorado 71730	863-5135
GP	Harper, John W.	619 West Grove, El Dorado 71730	863-5146
ORS	Hartmann, Ernest R.	El Dorado	863-7158
#	Henley, Paul G.	427 West Oak, El Dorado 71730	862-1351
GP	Hill, Grady E.	443 West Oak, El Dorado 71730	862-5184
PTH	Jennings, R. Duke	714 West Faulkner, El Dorado 71730	798-4299
GE	Jones, Steve A.	Post Office Box 851, Hampton 71744	863-2253
GP	Kieu, Dao Q.	460 West Oak, El Dorado 71730	862-4216
R	King, Billy D.	318 Thompson, El Dorado 71730	
OPH	Landers, Gardner H.		

Type of Practice	Member's Name	Address	Telephone Number
GS	Menendez, Moises A.	412 North Washington, El Dorado 71730	862-3411
FP	Moore, Berry L., Jr.	615 West Grove, El Dorado 71730	863-4185
GS	Moore, John H.	412 North Washington, El Dorado 71730	862-3411
U	Murfee, Robert M.	619 North Newton, El Dorado 71730	862-5439
PD	McKinney, J. Schuler	209 Thompson, El Dorado 71730	862-4994
R	Parkman, Robert L., Jr.	460 West Oak, El Dorado 71730	863-2253
AN	Pinkerton, Raymond E.	700 West Grove, El Dorado 71730	864-3200
IM	Pirniqne, Allan S.	714 West Faulkner, El Dorado 71730	862-5184
OBG	Rabie, Fouad M.	445 West Oak, El Dorado 71730	863-4101
GP	Riley, Warren S.	Post Office Box 1982, El Dorado 71730	863-4508
R	Roesler, Marvin J.	700 West Grove, El Dorado 71730	864-3371
PD	Rogers, Henry B.	209 Thompson, El Dorado 71730	862-4994
D	Sample, Dorothy C.	525 West Faulkner, El Dorado 71730	862-5485
R	Schultz, Wayne H.	Post Office Box 1998, El Dorado 71730	862-2253
GS	Scurlock, William R.	412 North Washington, El Dorado 71730	862-3411
GP	Seale, James E., Jr.	528 West Faulkner, El Dorado 71730	863-7154
FP	Smith, George W.	704 West Grove, El Dorado 71730	862-7661
AN	Stevens, Willis M., Jr.	460 West Oak, El Dorado 71730	863-2275
PD	Sykes, James D.	209 Thompson, El Dorado 71730	862-4994
FP	Sykes, Robert R.	416 1/2 North Newton, El Dorado 71730	862-5571
OBG	Thibault, Frank G., Sr.	416 North Newton, El Dorado 71730	862-5403
GS	Tommey, C. E.	412 North Washington, El Dorado 71730	862-3412
GP	Trinh, Cuong	Post Office Box 851, Hampton 71744	798-4299
OBG	Turnbow, R. L.	427 West Oak, El Dorado 71730	863-6157
FP	Warren, George W.	Post Office Box W, Smackover 71762	725-3471
IM	Weedman, James B.	714 West Faulkner, El Dorado 71730	862-5184
GS	Wharton, Joseph B., Jr.	317 Thompson, El Dorado 71730	862-4221
OPH	Williamson, John R.	318 Thompson, El Dorado 71730	862-4216
IM	Wilson, Larkin M.	714 West Faulkner, El Dorado 71730	862-5184
OPH	Wilson, Paul H.	514 West Faulkner, El Dorado 71730	862-5352
OTO	Wise, J. F.	306 Thompson, El Dorado 71730	862-7918
GS	Yocum, David M., Jr.	412 North Washington, El Dorado 71730	862-3411

#### YAN BUREN COUNTY

GP	Hall, John A.	Post Office Box 310, Clinton 72031	745-2111
GP	Pearce, Charles G.	Post Office Box 51, Clinton 72031	745-2412
FP	Read, Paul S.	Route 2, Box 175-B, Fairfield Bay 72088	884-3377
GP	Stuteville, Orion H.	Post Office Box 397, Leslie 72645	447-2711

#### WASHINGTON COUNTY

D	Albright Spencer D., III	1925 Green Acres Road, Fayetteville 72701	443-3413
GP	Applegate, C. Stanley	220 Meadow Avenue, Springdale 72764	751-4637
ORS	Arnold, James A.	Post Office Box 1608, Fayetteville 72701	521-2752
RD	Baggett, Jeff J.	Post Office Box 233, Prairie Grove 72753 (Res.)	846-2312
FP	Baker, Donald B.	241 West Spring, Fayetteville 72701	521-8260
FP	Benjamin, George H.	304 South Maxwell, Siloam Springs 72761	524-3141
GP	Box, Ivan H.	Post Office Drawer E, Huntsville 72740	738-2115
PTH	Boyce, John M.	607 West Maple, Springdale 72764	751-5711
U	Brandon, H. B.	Route 9, Box 219, Fayetteville 72701	521-8980
RD	Brizzolara, Charles M.	5512 South Grandview, Little Rock 72207 (Res.)	666-5977
U	Brooks, Walter Ely	Route 9, Box 219, Fayetteville 72701	521-8980
P	Brown, Spencer H.	4313 West Markham, Little Rock 72201	664-4500
FP	Buckley, Carie D., Jr.	767 West North, Fayetteville 72701	521-3600
PD	Burnside Wade W., Jr.	207 East Dickson, Fayetteville 72701	443-3471
IM	Butler, G. Harrison	675 Lollar Lane, Fayetteville 72701	521-8200
FP	Capps, James A., Jr.	1215 South Thompson, Springdale 72764	756-0610
AN	Chester, Robert L.	1500 Dodson, Fort Smith 72901	782-2071
RD	Clark, LeMon	1679 Elmwood, Fayetteville 72701 (Res.)	521-7657
ORS	Coker, Tom P.	Post Office Drawer 1608 Fayetteville 72701	521-2752
OBG	Cole, George R.	740 Lollar Lane, Fayetteville 72701	521-4433
OBG	Councille, Clifford C., Jr.	1011 North College, Fayetteville 72701	442-9809
OTO	Crocker Thermon R.	4255 Venetian Lane, Fayetteville 72701	521-1238
GP	Day, John K.	600 Razorback Road, Fayetteville 72701	575-4451
OBG	DeSandre, Frank A.	606 South Young, Springdale 72764	751-6284
AN	Dodson, C. Dwight	946 California, Fayetteville 72701 (Res.)	443-3387
FP	Dorman, John W.	2000 Pin Oak, Springdale 72764 (Res.)	751-4527
*	Dunaway, Geoffrey L.	241 West Spring, Fayetteville 72701	521-8260
IM	Duncan, Philip E.	675 Lollar Lane, Fayetteville 72701	521-8200
P	Edmisten, Jack	Post Office Box 1108, Fayetteville 72701	521-1221
R	Edmondson, Charles T.	1605 Springcreek Road, Springdale 72764 (Res.)	751-0492
FP	Etherington, Robert A.	41 Kingshighway, Eureka Springs 72632	253-9746
P	Finch, Steohen B.	530 North College, Fayetteville 72701	443-3491
OTO	Fincher, G. Glen	2100 Green Acres Road, Fayetteville 72701	521-3363
FP	Gardner, Buford M.	Post Office Box 730, Fayetteville 72701	443-5291
D	Ginger, John D.	102 West Dickson, Fayetteville 72701	521-2525
R	Greenhaw, James J.	205 East Jefferson, Siloam Springs 72761	524-4141
IM	Hall, Joe B.	675 Lollar Lane, Fayetteville 72701	521-8200
R	Harris, Murray T.	Post Office Box 1286, Fayetteville 72701	521-6480
ORS	Harris, W. Duke	Post Office Drawer 1608, Fayetteville 72701	521-2752
OBG	Harrison, William F.	1011 North College, Fayetteville 72701	442-9809
FP	Hart, Hamilton R.	Post Office Box 1488, Fayetteville 72701	521-3600
RD	Hathcock, P. Loyce	909 Hall Avenue, Fayetteville 72701 (Res.)	442-4424
PD	Haynes, James E.	207 East Dickson, Fayetteville 72701	443-3471
ORS	Heinzelmann, Peter R.	Post Office Box 1608, Fayetteville 72701	521-2754
OPH	Henry, L. Murphey	Post Office Box 1267, Fayetteville 72701	442-5227
OPH	Henry, Louise M.	Post Office Box 1267, Fayetteville 72701	442-5227
OPH	Henry, Morriss M.	Post Office Box 1727, Fayetteville 72701	442-5227
IM	Higginbotham, Hugh B.	675 Lollar Lane, Fayetteville 72701	521-8200
ONC	Hoge, Arthur F., Jr.	160-B Poplar, Fayetteville 72701	521-3386
FP	Huskins, James D.	304 South Maxwell, Siloam Springs 72761	524-3141
OBG	Hutchinson, Harry T.	304 South Maxwell, Siloam Springs 72761	524-3141
A	Hutson, Martha F.	2100 Green Acres Road, Fayetteville 72701	521-3363
CD	Inlow, Charles W.	Post Office Box 186, Springdale 72764	756-9185
P	Jarvis, Fred D., Jr.	219 South Thompson, Springdale 72764	751-7052
NS	Johnson, Jorge H.	3000 Market, Fayetteville 72701	443-5245
P	Jones, Edwin C.	401 West Emma, Springdale 72764	751-6993
FP	Keagy, Charles L.	41 Kingshighway, Eureka Springs 72632	253-9746
A	Koehn, Laura J.	2100 Green Acres Road, Fayetteville 72701	521-3363
PD	Lawson, Wilbur G.	207 East Dickson, Fayetteville 72701	443-3471
RD	Lesh, Ruth E.	356 North Washington, Fayetteville 72701 (Res.)	442-2163
RD	Lesh, Vincent O.	Route 6, Box 273, Rogers 72756 (Res.)	925-1989
PTH	Litton, Eva W.	1125 North College, Fayetteville 72701	442-1012



Type of Practice	Member's Name	Address	Telephone Number
PTH	Lifton, M. A.	Veterans Administration Medical Center, Fayetteville 72701	443-4301, Ext. 561
OBG	Lushbaugh, Harmon	740 Lollar Lane, Fayetteville 72701	521-4433
FP	Markland, Linda A.	241 West Spring, Fayetteville 72701	521-8260
GE	Martin, William C.	675 Lollar Lane, Fayetteville 72701	521-8200
OBG	Mashburn, James D.	207 East Dickson, Fayetteville 72701	442-5377
TS	Miller, Charles H.	1749 North College, Fayetteville 72701	521-3300
R	Mills, William C., III	Post Office Box 1286, Fayetteville 72701	521-6971
IM	Moore, Arthur F.	675 Lollar Lane, Fayetteville 72701	521-8200
ORS	Moore, James F.	Post Office Drawer 1608, Fayetteville 72701	521-2752
GP	Moose, John I.	304 South Maxwell, Siloam Springs 72761	524-3141
GP	Morgan, Tad M.	803 Quandt, Springdale 72764	751-9236
GS	Murry, J. Warren	Post Office Drawer A Fayetteville 72701	521-3300
R	McAlister, Joseph H.	Route 4, Box 188, Huntsville 72740	665-2735
RD	McAllister, Max F.	329 Oakwood Street, Fayetteville 72701 (Res.)	442-6522
OPH	McDonald, James E., II	461 East Township Road Fayetteville 72701	521-2555
GP	McEvoy, F. E.	903 Quandt, Springdale 72764	751-9236
GS	McNair, William R., Jr.	160A Poplar, Fayetteville 72701	521-1484
PTH	Nettleship, Mae B.	Post Office Box 817, Fayetteville 72701	442-1012
IM	Painter, Monroe B.	675 Lollar Lane, Fayetteville 72701	521-8200
ORS	Park, John P.	Post Office Drawer 1608, Fayetteville 72701	521-2752
OPH	Parker, Joe C.	700 South Young, Springdale 72764	751-1028
FP	Parker, Lee B., Jr.	241 West Spring, Fayetteville 72701	521-8269
FP	Patrick, James K.	241 West Spring, Fayetteville 72701	521-8260
U	Pickett, James D.	Route 9, Box 219, Fayetteville 72701	521-8980
FP	Power, John R.	220 Meadow Avenue Springdale 72764	751-4637
FP	Puckett, Billy J.	304 South Maxwell, Siloam Springs 72761	524-3141
GYN	Rabon, Nancy A.	Evelyn Hills Shopping Center, Fayetteville 72701	442-8261
R	Riddick, Earl B., Jr.	1617 North College, Fayetteville 72701	521-6480
GS	Rolufs, Lloyd S.	41 Kingshighway, Eureka Springs 72632	253-9746
OBG	Romine, James C.	740 Lollar Lane, Fayetteville 72701	521-4433
FP	Rouse, Joe P.	Post Office Box 1408 Fayetteville 72701	521-3600
NS	Runnels, Vincent B.	Post Office Drawer 1608, Fayetteville 72701	521-2752
OPH	Sharp, James D.	102 West Dickson, Fayetteville 72701	521-4949
RD	Siegel, Lawrence H.	233 Oakwood, Fayetteville 72701 (Res.)	442-2083
OPH	Singleton, E. Mitchel	Post Office Box 908, Fayetteville 72701	521-4843
IM	Sisco Charles P.	Post Office Box 65, Springdale 72764	751-4579
GP	Smith, Austin C.	Post Office Drawer E, Huntsville 72740	738-2115
N	Smith, Bob W.	Post Office Box 1827, Fayetteville 72701	442-4070
FP	Steadman, Hunter M., Jr.	41 Kingshighway, Eureka Springs 72632	253-9746
FP	Stinnett, Charles H.	304 South Maxwell, Siloam Springs 72761	524-3141
RD	Van Pelt, Ross	Post Office Box 110A, Holiday Island 72632 (Res.)	253-8546
FP	Vinzant, John W.	22 East Spring, Fayetteville 72701	443-3417
AN	Viskovich, Borko B.	21 McElray Plaza, Fayetteville 72701	521-3832
R	Ward, Herbert W.	Post Office Box 1786 Fayetteville 72701 (Res.)	521-6556
FP	Weaver, Donald D.	Post Office Box 9, Gentry 72734	736-2213
FP	Weaver, Robert H.	Post Office Box 9, Gentry 72734	736-2213
FP	Wheat, Ed	130 North Spring, Springdale 72764	751-5704
A	Whiteside, Edwin	Post Office Box 1208, Fayetteville 72701	443-5241
FP	Whiting Tom D.	803 Quandt, Springdale 72764	751-9236
GP	Wilson, Robert B., Jr.	Post Office Drawer E Huntsville 72740	738-2115
GS	Wood, Jack A.	1749 North College, Box A, Fayetteville 72701	521-3300
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R	Bell, John E.	1300 South Main, Searcy 72143	268-8500
GP	Bridges, Olen W.	Post Office Box 310, Searcy 72143	268-2407
IM	Brown, Arnold R.	1105 Dobbins, Searcy 72143 (Res.)	268-2545
FP	Citty, Jim C.	2900 Hawkins, Searcy 72143	268-5364
GP	Edwards, Hugh R.	1300 South Main, Searcy 72143	268-5361
R	Elliott, Robert E.	1300 South Main, Searcy 72143	268-8500
GS	Farrar, Henry C.	2900 Hawkins, Searcy 72143	268-5364
FP	Formby, Thomas A.	2900 Hawkins, Searcy 72143	268-5364
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FP	Koch, C. W., Jr.	1407 East Race, Searcy 72143	268-5845
D	Loe, Arlis W.	Post Office Box 1409, Texarkana 75501	214-792-7151
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GS	Simpson, James A.	Post Office Box 159, Searcy 72143	268-2441
GP	Smith, Bernard C.	Post Office Drawer C, Bradford 72020	344-2788
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GP	Tate, Sidney W.	1300 South Main, Searcy 72143	268-5388
PD	Weed, David H.	2900 Hawkins, Searcy 72143	268-5364
IM	White, William D.	2900 Hawkins, Searcy 72143	268-5364
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FP	Wilson, Fred E.	Post Office Box 596, McCrory 72101	731-2511
YELL COUNTY			
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GP	Harris, Walter P.	Post Office Box 487, Danville 72833	495-2714

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GP .....	Maupin, James L.....	..Post Office Box 337, Dardanelle 72834	229-4172
GP .....	Pennington, James O. ....	..Post Office Box 68, Ola 72853.....	..489-5241
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GP .....	Russell, Gary W.....	..Post Office Box 337, Dardanelle 72834	..229-4172

## CODES FOR TYPE OF PRACTICE

A .....	Allergy	HEM .....	Hematology	PDC .....	Pediatric Cardiology
ADM .....	Administrative Medicine	IM .....	Internal Medicine	PH.....	Public Health
AN .....	Anesthesiology	NEP. ....	Nephrology	PM.....	Physical Medicine and Rehabilitation
CD .....	Cardiovascular Disease	N .....	Neurology	PS .....	Plastic Surgery
CDS .....	Cardiovascular Surgery	NM .....	Nuclear Medicine	PTH.....	Pathology
CHP .....	Child Psychiatry	NS .....	Neurological Surgery	PUD .....	Pulmonary Diseases
CRS .....	Colon and Rectal Surgery	OBS .....	Obstetrics	R .....	Radiology
D .....	Dermatology	OBSG. ....	Obstetrics and Gynecology	RHU .....	Rheumatology
EM .....	Emergency Care	OM .....	Occupational Medicine	TS .....	Thoracic Surgery
END .....	Endocrinology	ONC.....	Oncology	U .....	Urology
FP .....	Family Practice	OPH.....	Ophthalmology	OS .....	Other Specialty
GE .....	Gastroenterology	ORS.....	Orthopedic Surgery	RD .....	Retired
GER .....	Geriatrics	OT .....	Otology	* .....	Intern
GP .....	General Practice	OTO .....	Otorhinolaryngology	** .....	Resident
GPM .....	General Preventive Medicine	P .....	Psychiatry	+ .....	Medical Student
GS .....	General Surgery	PD .....	Pediatrics	# .....	Deceased
GYN .....	Gynecology	PDA .....	Pediatric Allergy		

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Post Office Box 1208  
Fort Smith, Arkansas 72902  
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Wats: 1-800-542-1058

Arkansas State Medical Board  
Joe Verser, M.D., Secretary  
Post Office Box 102  
Harrisburg, Arkansas 72432  
Phone: 578-2677

American Medical Association  
535 North Dearborn Street  
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Phone: 312-751-6000

Drug Enforcement Administration  
1 Union National Plaza, Suite 850  
Little Rock, Arkansas 72201  
Phone: 378-5981

Legal Counsel  
Mr. Eugene R. Warren  
Mr. Michael W. Mitchell  
Mr. Robert M. Cearley  
Post Office Box 1510  
Little Rock, Arkansas 72203  
Phone: 378-7870

Pulaski County Medical Society  
500 South University, Suite 311  
Little Rock, Arkansas 72205  
Phone: 664-3402

Arkansas Department of Health  
Robert W. Young, M.D., Director  
4815 West Markham Street  
Little Rock, Arkansas 72201  
Phone: 661-2000

University of Arkansas College of Medicine  
Thomas A. Bruce, M.D., Dean  
4301 West Markham  
Little Rock, Arkansas 72201  
Phone: 661-5000

### Meeting Dates

Arkansas Medical Society

April 20-23, 1980	Arlington Hotel, Hot Springs
April 26-29, 1981	Camelot Inn, Little Rock
April 18-21, 1982	Arlington Hotel, Hot Springs
April 17-20, 1983	Camelot Inn, Little Rock

American Medical Association  
House of Delegates

Annual Meeting	
July 20-24, 1980	Chicago
Interim Meeting	
December 7-10, 1980	San Francisco
Annual Meeting	
June 7-11, 1981	Chicago
Interim Meeting	
December 6-9, 1981	Las Vegas



## Arkansas Medical Society Group Insurance Plans

Professional Liability	American Physicians Insurance Exchange 4100 McEwen Road, Suite 196 Dallas, Texas 75234 Phone: (214) 386-6400
Professional Liability	The St. Paul Companies Little Rock Service Office 1600 First National Building Little Rock, Arkansas 72201 Phone: 376-4151
Professional Overhead Expense Plan Professional Men's Disability Plan	Rather, Beyer and Harper, Agents 362 Prospect Building Little Rock, Arkansas 72207 Phone: 664-8791
Life	Northwestern National Life Insurance Company Meyer F. Marks, Inc. 1501 North University, Suite 470 Little Rock, Arkansas 72207 Phone: 664-7802
Medical, Surgical, Major Medical	Arkansas Blue Cross-Blue Shield Post Office Box 2181 Little Rock, Arkansas 72203 Phone: 378-2000
Workmen's Compensation Dividend Plan	Dodson Insurance Group Post Office Box 599 Kansas City, Missouri 64141 Phone: (816) 361-3400

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# Opportunities to Practice Medicine in Arkansas

**BERRYVILLE.** Population 2,674; trade area population 18,000. Opportunity for two general practitioners and an obstetrician/gynecologist. A medical office building is in the planning stage and space will be leased on a first-come, first-served basis. Berryville has a 27-bed general hospital and a 52-bed I.C.F. nursing home.

**DANVILLE.** Population 1,700; trade area population 6,000. Opportunity for a family practitioner and an obstetrician/gynecologist. Danville presently has two family practitioners who wish to limit their practices and they will assist new physicians in developing their practice. Office space is available and there is a 56-bed hospital in the community.

**HARTFORD.** Population 700. Hartford is located 30 miles south of Fort Smith (population 70,000), in an area of several small towns without physicians. There is a doctor in Huntington which is 11 miles from Hartford. A site has been donated for a medical building and construction will begin as soon as plans are approved.

**LINCOLN.** Population 1,500; trade area population 10,000. Lincoln is 18 miles southwest of Fayetteville, home of the University of Arkansas. An opportunity exists for a family practitioner. Office space and equipment are available. The nearest hospital is a 200-bed facility in Fayetteville, where an array of sophisticated medical services are offered.

**YELLVILLE.** Population 1,200; trade area population 5,000. An opportunity exists for a family practitioner and an internist. In addition to the 59-bed general hospital in Yellville, there is also a 40-bed nursing home, with a new nursing home facility under construction. Yellville is approximately 100 miles from Little Rock, and 80 miles from Springfield, Missouri.

**BATESVILLE.** Population 7,500; trade area population 40,000. Physicians in the community have expressed a need for additional family physicians, an otolaryngologist, and an orthopaedic surgeon. There are presently nine family physicians, one ophthalmologist, two general surgeons, two radiologists, one pediatrician, one pathologist, one anesthesiologist, one obstetrician/gynecologist, and one internist practicing in Batesville. Batesville has two hospitals with a combined bed capacity of 160, and two modern nursing homes with a combined bed capacity of 247 beds.

**CAVE CITY.** Population 1,200; trade area population 15,000. There is presently one physician in Cave City who is willing to retire within five years if two doctors would locate in the town and take over his clinic and office. There are two open-staff hospitals in Batesville, a distance of 14 miles.

**HARDY.** Population 700, Hardy is located in the center of three retirement areas. There is presently one general practitioner in the town. A contract has been awarded to build a 50-bed hospital and additional physicians are needed.

**MANILA.** Population 2,500; trade area population 15,000. There is a need for general practitioners in Manila, either in solo practice or partnership arrangement. Financial arrangements include minimum guarantee, relocation expenses, and assistance in obtaining any necessary bank financing. Office space is available and the hospital will provide assistance in obtaining office equipment. A new 32-bed hospital was completed in the fall of 1978.

For further information on these and other opportunities contact

**PHYSICIAN PLACEMENT SERVICE  
ARKANSAS MEDICAL SOCIETY**

Post Office Box 1208

Fort Smith, Arkansas 72902

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Arkansas MEDICAL  
SOCIETY

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Vol. 76 No. 8

FORT SMITH, ARKANSAS

104th Annual Session  
Arkansas Medical Society  
Arlington Hotel, Hot Springs, Arkansas, April 20-23, 1980

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The effectiveness of Valium (diazepam/Roche) in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

**Contraindicated:** Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.

**Warnings:** Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms (similar to those with barbiturates and alcohol) have occurred following abrupt discontinuance (convulsions, tremor, abdominal and muscle cramps, vomiting and sweating). Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

**Usage in Pregnancy:** Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

**Precautions:** If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed; drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

**Side Effects:** Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported, should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

**Dosage:** Individualize for maximum beneficial effect. *Adults:* Tension, anxiety and psychoneurotic states, 2 to 10 mg b.i.d. to q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed, adjunctively in skeletal muscle spasm, 2 to 10 mg t.i.d. or q.i.d.; adjunctively in convulsive disorders, 2 to 10 mg b.i.d. to q.i.d. *Geriatric or debilitated patients:* 2 to 2½ mg, 1 or 2 times daily initially, increasing as needed and tolerated. (See Precautions.) *Children:* 1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use under 6 months).

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## SCIENTIFIC ARTICLES

Entering the Eighties .....	309
<i>Harry P. Ward, M.D.</i>	
Arkansas Cervical Cancer Program ..	312
<i>R. C. Steinkamp, M.D.</i>	
<i>Juan Roman-Lopez, M.D.,</i>	
<i>J. A. Kenney, M. G. Hairston,</i>	
<i>S. Hylton, W. N. Hammett,</i>	
<i>S. Marsh, P. Becton, S. Collier</i>	
Grand Rounds: "Extracranial	
Carotid Artery Disease" .....	323
<i>T. D. Cain, M.D., J. S. Wood, M.D.,</i>	
<i>and O. W. Beard, M.D.</i>	

## FEATURES

ECG of the Month .....	331
<i>John Watson, M.D.</i>	
Office Orthopaedics: "Painful	
Non-Union of Lateral Malleolus	
Fractures: Three Case Reports" ..	332
<i>I. Leighton Millard, M.D.</i>	
Pediatric Review: "Salmonellosis in	
Infants in Arkansas" .....	335
<i>Gene L. France, M.D.</i>	
<i>and Russell W. Steele, M.D.</i>	
Editorial: "Non-A, Non-B	
Hepatitis" .....	338
<i>Alfred Kahn, Jr., M.D.</i>	
Proceedings of Societies .....	339
Medicine in the News .....	340
Council Minutes .....	344
House of Delegates Minutes .....	345
Things to Come .....	346
Keeping Up .....	347
Personal and News Items .....	348
Resolutions .....	349
New Members .....	349

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## Entering the Eighties University of Arkansas for Medical Sciences Campus Progress Report

Harry P. Ward, M.D., Chancellor\*

As we enter the 1980s the University of Arkansas Medical Sciences Campus is both optimistic and apprehensive. The past decade of the 70s has seen an extraordinary surge of new facilities and it is fair to say that we have had a decade of "bricks and mortar." For the first time in the one hundred year history of UAMSC the campus has the physical space required for support of high quality programs in education, service and research. The decade of the 80s will allow initiation of many programs and, as our profession knows, program planning is much more difficult than facility planning. Among the programs that either have been initiated or will be started this year are the following:

### 1) Clinical Programs

The University Hospital has been functioning at a reduced level for the past several years. The reasons are complex, including difficulty in nurse recruitment that forced the closure of approximately 50 beds in 1978/79. This year, the Arkansas Legislature increased our flexibility in hiring nurses and we have been fortunate to fill every nursing vacancy over the past three months. Thus, we are planning to open 90 beds during the 1979/80 fiscal year. Approximately 40 of these beds have already been opened, occupancy has been high, and we are optimistic that the remaining beds will be opened by the first of the year. The fiscal implication of opening these beds is complicated: Specifically, UAMSC is incurring significant expenses before generating the expected revenue to defray these costs. This is the usual cost-revenue problem of any "expanding" industry but more complicated in a state system that controls the cash reserves of the institution.

The Ambulatory Care Center has been com-

pleted and we are proceeding with the final steps to equip this approximately 32,000 square feet facility. The space is designed in modular units allowing the development of a primary care team practice for both the educational and service components of the University. Specialty clinics have modern, up-to-date equipment providing the finest in diagnostic and selected therapeutic modalities. The Ambulatory Care Center is connected to the Hospital by a bridge that enters on the first floor close to the Department of Radiology. The "separate" but combined nature of this facility will allow UAMSC to recognize appropriately the importance of ambulatory care in student education and to remove it from the usual dark environment of the old hospital outpatient clinic.

A new patient accounting system is being implemented. After a considerable review and discussion with appropriate administrative and legislative leaders, UAMSC signed a contract to purchase a new, up-to-date patient accounting system from IBM. Negotiations have been initiated for the purchase of hardware in order to implement this important program. If plans proceed as scheduled, the new system will be in place July 1, 1980. Hopefully, the insertion of this new data system will reduce the large number of mistakes and inordinate delays that have occurred in UAMSC's patient billing for many years.

News from the affiliated hospitals is also optimistic. The new VA Hospital will initiate construction sometime this summer and the Children's Hospital has completed its evaluation of the requirements for revenue bonds to assist in expansion. It is important to remember that the general pediatric program of the University is being moved to Children's Hospital. This de-

\*University of Arkansas Medical Sciences Campus, 4301 West Markham, Little Rock, Arkansas 72201.



cision has been implemented gradually and, at this time, only a newborn nursery and a small 24-bed general pediatric ward remain on this campus. I suspect that we will retain the newborn nursery—the Level III Nursery—a shared program with St. Vincent Infirmary and Arkansas Children's Hospital.

The changes in clinical programs at UAMSC will be the major thrust of the Medical Center for the next several years. It is our hope to develop a comprehensive general program with selected tertiary care facilities that are needed by the community and the state. It is vitally important that the clinical base be strengthened in order to provide the "core" needed for excellence in education and research of UAMSC.

## **2) Rural Health Programs**

The Area Health Education Centers (AHECs) continue to evolve as major educational sites throughout the state. The Jonesboro and El Dorado AHECs received provisional accreditation by the Board of Family Medicine to initiate a residency program July, 1980. With this approval, we now have five Family Medicine sites throughout Arkansas with a sixth site at Texarkana in the planning stage. Medical students are selecting senior year rotations in these centers with increasing frequency and, in fact, 109 of the 136 senior students will spend a portion of their senior year at one of the sites. We are optimistic that both of these new residency programs will "fill" their first year slots this next year. In addition to medical students rotating at the AHECs, the College of Nursing has implemented a vigorous student rotation and we are planning to start rotation of students from the Colleges and Pharmacy and Health Related Professions this next year. Because of the wide variety of outreach programs of UAMSC, we are considering the formation of a "Rural Health Institute" in order to coordinate and facilitate all of the diverse efforts in rural health. The format and details have not been worked out. It is our hope that this program will be able to interface with efforts of the State Medical Society and the State Department of Health.

## **3) Research Programs**

The research programs at the UAMSC have been modest and need to be considerably improved over the next few years. Our campus receives approximately four million dollars a year

of research grants. This number should be compared with approximately twenty million dollars a year at the University of Tennessee, twenty-four million dollars at the University of Alabama, thirty million dollars per year at the University of Colorado. In fact, in a most recent analysis of research programs prepared by the Association of American Medical Colleges, the University of Arkansas Medical School ranked in the lowest quartile. It is not appropriate to consider that UAMSC should become a research institute, yet a strong research program supports the educational and service components of the Medical Center as well as contributing to the total knowledge of human disease.

In order to expand our program, it is necessary to identify some "selective clusters" of excellence that should be developed. Such clusters will be based on the expertise that is available, the needs of the state, and the availability of support. Consistent with these guidelines, we are developing a Nutrition Center. The major emphasis of the Nutrition Center will be research, with education and service as secondary goals. Three major research thrusts are envisioned: nutrition and development; nutrition and selected disease processes including endocrinology, lipids, obesity and diabetics; and the biochemistry of nutrition with special emphasis on trace metals and methods of dietary substitutions.

Discussions have been initiated with the National Center for Toxicological Research located at Pine Bluff in order to strengthen interrelationships between our two institutions. Without question, the location of this important national resource in Arkansas demands that the University should actively participate in this major health problem facing the nation and the world. We are working on the development of a rehabilitation center, expanding the efforts of the Arkansas Rehabilitation Institute located at Central Baptist Hospital. This effort must include a comprehensive look at rehabilitation including neurological problems, spinal cord injury, learning disabilities, speech therapy, etc. The cooperative program in geriatrics with the VA Hospital is moving smoothly. The expanded facility at the North Little Rock VA and the special Gerontology Research and Education Center (GREC) grant obtained by the VA places us as one of the national leaders in this important

field. Over the past several months we have received two special gifts for the Department of Psychiatry that will allow us to considerably expand and enrich our efforts. The first endowment of a chair in Child Psychiatry was provided by a combination of funds from the Working Women's Group and the Development Council of the UAMSC. The second was the largest gift in the history of our institution from the Marie Wilson Howell estate of \$1.5 million dollars for the Department of Psychiatry. This support will be used for endowment of a chair in Psychiatry and for a number of special research efforts in the field of behavioral science. The final major

research program to be noted is the Medical Center's role in the experimental program to stimulate competitive research in Arkansas (EPSCOR). This grant effort, sponsored by the National Science Foundation, will be directed to two areas at UAMSC, neuroscience and molecular biology-endocrinology. Faculty groups have been formed that span departments and colleges and a comprehensive multidisciplinary grant is being prepared.

In summary, the decade of the 80s will be a *program* decade. It will be an exciting time and, of most importance, it will be an appropriate way to start our next one hundred years.





# Arkansas Cervical Cancer Program

Ruth C. Steinkamp, M.D., F.A.C.P.,<sup>1</sup> Juan Roman-Lopez, M.D.,<sup>2</sup> Jane A. Kenney, B.S.N.,<sup>3</sup>  
Max G. Hairston, B.S.N.,<sup>4</sup> Sue Hylton, R.N.,<sup>5</sup> Wilma N. Hammett, B.N.,<sup>6</sup>  
Sandra Marsh, B.S.,<sup>7</sup> Paul Becton, B.B.A.,<sup>8</sup> and Steven Collier<sup>8</sup>

## ABSTRACT

A four year experience, 1975-1979, of the Arkansas Health Department in screening for and out-patient diagnosis of cervix cancer is presented.

Cytological screening on 100,196 women aged 15 years and over represents testing of 12 percent of all women of this age group in Arkansas. As over 80 percent of screenees were in poverty or low socioeconomic levels, about one-third of all such status Arkansas women were screened.

Approximately 82/1,000 cervical smears were read as inconclusive (mild or moderate dysplasia), 12/1,000 as suspicious (severe dysplasia) and 2/1,000 as positive (unequivocal malignant cells). Follow-up diagnosis by colposcopically-directed biopsy in most cases or by cervical conization produced histological findings of invasive squamous cell cervix cancer in 0.5/1,000 screenees, of squamous cell carcinoma-in-situ in 6.5/1,000 screenees, severe cervix dysplasia in 4.1/1,000 screenees, and other dysplasias in 12.9/1,000 screenees. Six carcinomas other than of cervix were found.

All women in 12 counties with tissue diagnoses made in the first two years of cervix carcinoma-in-situ or severe dysplasia (67 patients) or of moderate or mild dysplasia (49 patients) were compared with a group of 298 age, race and social status matched control patients with benign or negative findings. The carcinoma-in-situ and severe dysplasia group averaged  $4.1 \pm 2.1$  and the moderate and mild dysplasia group averaged  $3.4 \pm 1.7$  cytology examinations before diagnosis. The control negative patients had  $3.0 \pm 1.9$  smears. Time from first recorded smear to diag-

nosis ranged from 8 to 64 months for those with carcinoma-in-situ or severe dysplasia and 12.3 to 57.1 for those with moderate or mild dysplasias. Control patients have been followed up to 94 months, averaged 30.9 months.

The Arkansas program demonstrates a significant, effective and efficient use of medical resources to identify and follow-up women for secondary prevention of invasive and possibly fatal cervix cancer. Additional efficiency may develop by further study to determine the optimal frequency of screening according to identified risk factors.

Recognition of the high mortality rate for cervical cancer in Arkansas, thirteenth among the States and the District of Columbia in 1970,<sup>1</sup> and the numerous critical medical shortage areas in the State<sup>2</sup> prompted an aggressive screening and diagnostic program in 1975.

The aims of the program are to screen women at increased risk of cervical pathology, to improve utilization of physician clinic time, to provide out-patient diagnostic procedures in areas proximal to screening clinics and to provide for referral and follow-up.

Development of the Arkansas Health Department (AHD) Program has been presented<sup>3</sup> in the past. Approval for program plans was sought and obtained from a wide representation of interested groups including the University of Arkansas Medical Center, the Arkansas Medical Society, the Arkansas Pathologists Association, the Arkansas Cancer Society and other professional, educational and consumer groups. Briefly, it includes cervical cytological screening at any of 109 clinics located in local health department clinics or affiliated Economic Opportunity Agency (E.O.A.) family planning clinics. Medical services for the screening clinics are supplied in the main by family practice physicians whose medical practice is local to the community. The clinics and the screening program seek and gratefully acknowledge the active cooperation of the local physicians which is immeasurably important for the success of the program. Conveniently located colposcopic biopsy clinics for referral of patients who are unable to use a private physician are established in either

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1. Former Director, Bureau of Cancer and Special Services, Arkansas Health Department.

2. Gynecology-Oncologist Consultant for the Arkansas Health Department.

3 and 6. Public Health Nurse Consultants, Bureau of Cancer and Special Services, Arkansas Health Department.

4 and 5. Former Public Health Nurse Consultants, Bureau of Cancer and Special Services, Arkansas Health Department.

7. Statistician, Arkansas Health Department.

8. University of Arkansas Medical Sciences, Medical Students.

Address reprint requests to Arkansas Health Department, Bureau of Cancer and Special Services, 4815 West Markham, Little Rock, Arkansas 72201.

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a regional health department facility (7 facilities), an E.O.A. clinic (1 facility), the University of Arkansas Medical Center or in private gynecologists' offices. Follow-up for abnormal cervical cytology by the public health nursing staff is aided by regular computerized reports to the clinics and aggressive management in diagnostic referral and follow-up. Limited capability to supply financial aid for diagnostic cervical conizations assists those women in need for whom hospital-based diagnosis is indicated. This paper analyzes the experience of the first four years of the Program.

### MATERIAL AND METHODS

From May, 1975 through June, 1979, a total of 185,260 cervical cytological examinations, representing 100,196 women, were taken in clinics operated by the local health departments in all counties of the State and by the cooperating western and central Arkansas E.O.A. family planning clinics. Screening smears also were taken on women confined to the Cummins State Prison. Also included in the screening results presented here are smears taken on women in venereal disease detection clinics except for those clinics located in the metropolitan district areas.

Sixty-two percent of the women (62,364) were white; 38% (37,832) were non-white. Racial characteristics of Arkansas for both sexes are 80% white, 19% black and 1% other races.

According to Arkansas Social Services and Rehabilitation standards, approximately 80% of all screenees are in poverty or low socioeconomic circumstances. The number reported here is equivalent to one-third of all such economically deprived Arkansas women 15 years of age and older.

In all instances, where possible, the single slide specimens included samplings of the vaginal pool, cervical scrape and the endocervix. In all cases direct vision is used to obtain the specimen. Nine accredited pathology laboratories received the slides for analysis. Prior agreement among the laboratories was gained for classification as follows: negative; inconclusive, including mild and moderate dysplasia; suspicious, including severe dysplasia and equivocal malignant cells; positive, presence of unequivocal malignant cells. Additionally, an unsatisfactory classification was included for those slides not readable for technical or other reasons.

For the nine laboratories the ranges for AHD cervical cytology examinations for the year prior to the present study were: negative 83-98%; inconclusive 2-14%, suspicious 0.3-2.7%, positive 0.1-0.4% and unsatisfactory 0.4-5.5%. Attention of the laboratories was called to their reading practices so as to minimize variation among the laboratories. At least some of the variation may be explained by population differences and medical care deficiencies among areas of the State. For example, in the Delta region where medical care services are limited, blacks comprise up to 80% or more of the population. By contrast, in the northwest and mountainous areas the population may be almost entirely white. Likewise medical care is disproportionate to the population, with greater concentration in urban areas, contributing to inattention to early symptoms or to correctable conditions.

### DIAGNOSTIC FOLLOW-UP

Standards for diagnostic follow-up of abnormal cytological smears included a repeat for those with unsatisfactory slides, immediate referral for possible biopsy to a colposcopic clinic or to the patient's physician for those with suspicious or positive slides, or for a persistent inconclusive cytological smear after treatment for specific or non-specific vaginitis.

Biopsies taken at a colposcopic clinic were sent in most cases, to the laboratory which performed the cytology smear. We feel that definitive correlation between cytological and histological material is a must when evaluating abnormal pap smear by colposcopy. Pathology reports were returned with the colposcopy findings to the central office which accedes the information into the computer data system. All reports were submitted to the screening clinic for continued follow-up of the patient by the local nurse according to the final disposition recommended by the gynecologist. Free communication existed between the clinics, the local physicians, the gynecologists, the pathologists and the central office.

Referral for diagnostic uterine dilatation and curettage and cervical conization was made for those instances where the transformation zone was not completely visualized, the smear was not explained by colposcopic examination and directed biopsy, the entire lesion was not visualized for adequate biopsy, the biopsy specimen showed



microinvasion or questionable invasion and/or the patient was not reliable for follow-up.

In instances where the patient was seen by a private physician, follow-up findings were sought by a letter from the central office requesting a copy of any pathology report. Follow-up was requested at 3, 6 and 9 months intervals after an abnormal cytology report, diagnostic procedure, or treatment and yearly thereafter. Where an abnormal cytology was not accounted for within 6 months by either a colposcopic examination and biopsy, by information from the private physician or by knowledge of other referral, the nurse made an effort to locate and refer the woman. If location of the patient, referral, or follow-up was unattainable, a certified letter was mailed to the patient's last known address to advise her that continued follow-up was needed.

#### LOST TO FOLLOW-UP

Shortly before the end of the second year, an attempt was made to evaluate follow-up of non-negative smears. During the nine month interval after December, 1976, 57 patients of 1668 with abnormal cervical cytology (2 inconclusive slides or a suspicious or positive slide) were lost to follow-up before a definitive diagnosis was made, e.g., 19 with 2 successive inconclusive smears, 34 with suspicious cytology findings, and 4 with positive findings. For those with suspicious or positive cytology, the lost to follow-up before diagnostic procedure represented 4.5% and 3% respectively. Less than 3% of those with inconclusive smears were reported lost. Certified letters were sent in the first two years of our study to 412 patients who were not seen within the specified time for subsequent follow-up examinations after a diagnostic study had been done.

#### FREQUENCY AND TIME INTERVAL OF CYTOLOGY SCREENING PRIOR TO DIAGNOSIS OF CARCINOMA-IN-SITU OR DYSPLASIA

All patients with either cervical carcinoma-in-situ or dysplasia of whatever degree diagnosed by tissue examination between May, 1975 and December, 1976 living within 12 Arkansas counties were selected for a sub-study of interval and number of smears before diagnosis. The 12 counties, Baxter, Benton, Clay, Columbia, Faulkner, Howard, Jackson, Marion, Perry, Pulaski, Sebastian and Sevier, were chosen by taking two counties from each of six strata of "female awareness" as defined according to "median years of

school completed for persons over 25 and percent of all persons below the poverty level for counties in 1970" in the 1973 survey of pap smear usage in Arkansas.<sup>4</sup> Two of the 12 counties, Baxter and Columbia, were found to have no clinic patients diagnosed with cervical carcinoma or dysplasia in the 20 month period. Patients with carcinoma-in-situ (42) and with severe dysplasia (25) were combined (CIS) for purposes of analysis as the two diagnoses may be arbitrary. Likewise, patients with moderate dysplasia (19) and with mild dysplasia (30) were grouped (D).

A group of 298 women with no cervical abnormality was matched with computer assistance to the study group by race, age, socioeconomic status, age at first pregnancy and county of clinic attended.

Clinic records for each of the study and control patients were examined. Results and dates of all cervical cytology examinations prior to diagnosis for the study patients and for all recorded examinations for the control group were recorded. Time intervals in months between separate examinations were calculated for each patient. For the study patients, the percent diagnosed at each sequential cytology examination was calculated.

#### RESULTS

For 55,522 women whose first cervical cytology screening or screening after a 13-month interval occurred in our clinics, 28.2% were younger than 20 years of age and 39.2% were in their twenties; 16.7% were between 30 and 44 years of age and 75.7% were 45 years and older. The latter accounted for 24.7% of the positive cytology readings for this group or a total of 22 women. One-fifth had not had a prior cervical cytology examination. Five percent were pregnant; 1.4% were in the menopause; 6.4% were postmenopausal; 3.8% had had a hysterectomy. The remainder were premenopausal. Fifty percent of women between the ages of 15-19 years were primigravida.

A total of 185,260 slides were analyzed. Cytological classification was negative for 88.6%, inconclusive for 8.2%, suspicious for 1.2%, positive for 0.2% and unsatisfactory for 1.8%.

Figure 1 presents the percent of all Arkansas women aged 15 years and over who were screened by race and Health Systems Agency (HSA) area. It is noted that HSA III (Central Arkansas) with the largest total population, had the lowest per-

centage screened, yet the total numbers screened in all HSA regions were comparable.

Age at diagnosis averaged 27 years for 1295 women with mild or moderate dysplasia, 31 years for 411 with severe dysplasia, 29 years for 656 with cervical carcinoma-in-situ, and 39 for 53 with invasive cervix cancer. Non-whites for all diagnoses averaged from one to three years younger than white women.

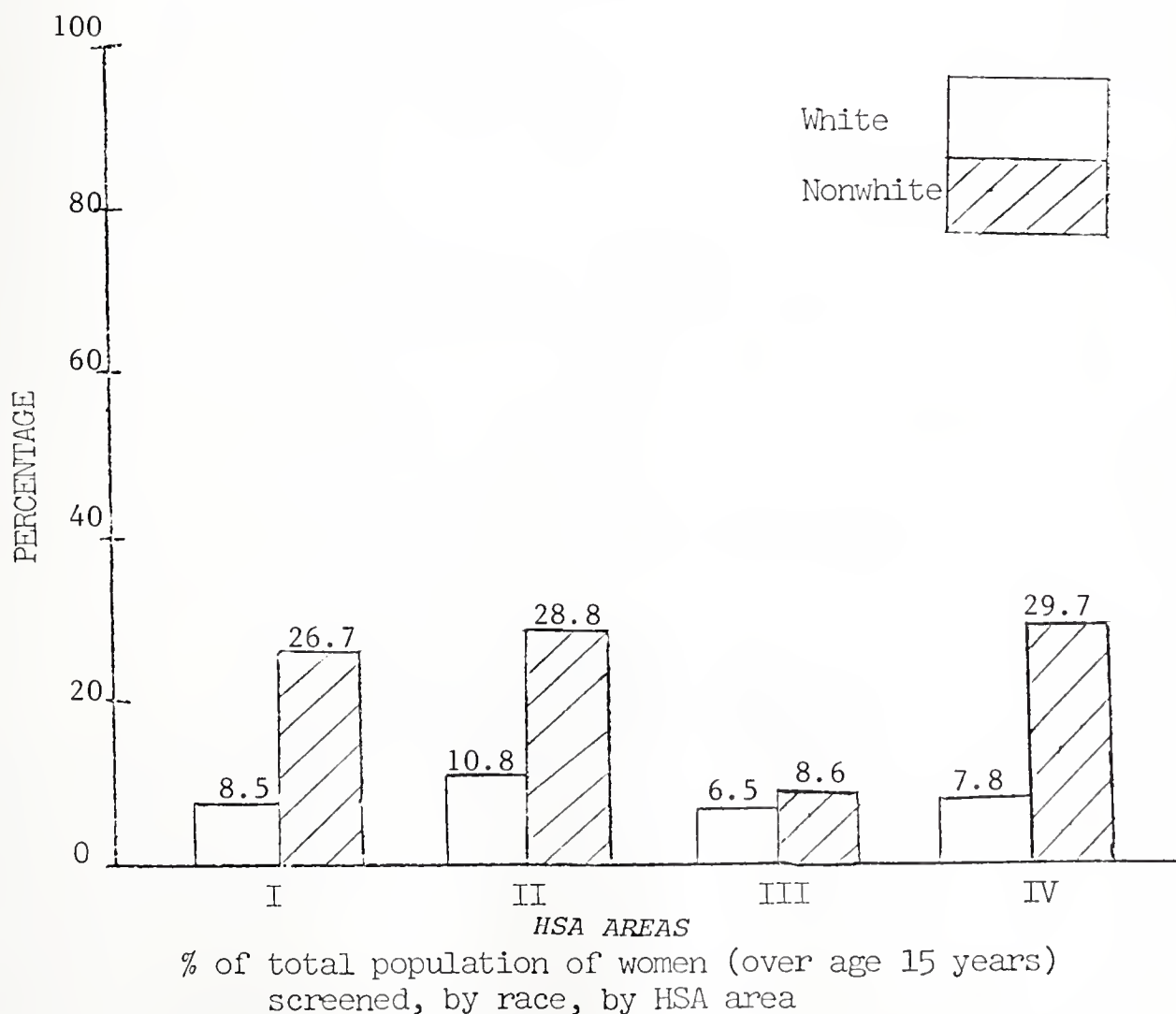
Rates of the diagnostic categories per 1,000 screenees by HSA are shown for white women in Figure 2 and for non-white women in Figure 3. The HSAs divide the State into four roughly equal population planning areas. Owing to the demography of the State (see above) the HSAs are racially distinctive, with a larger proportion of non-whites in the southern and southeastern areas.

In the southern part of the State a diagnosis of severe dysplasia or greater abnormality was

found in 15.6/1,000 white screenees, more than twice as great as in the western and northwestern sections where a comparable rate was 6.4/1,000. Similar findings were noted for non-whites 15.6/1,000 compared with 8.4/1,000. The northeastern and central areas were comparable for white and non-white women, 10.6/1,000 and 12.7/1,000 in the northeast and 10.8/1,000 and 10.3/1,000 in the central areas, respectively.

Table 1 presents the percent of patients by histology diagnosis according to the cytology of the smear preceding the biopsy. Those with negative cytology were referred because of abnormal clinical findings and included three or 5.6% of patients with invasive disease. Inconclusive findings (mild or moderate dysplasia on cytology) preceded the biopsy diagnosis of carcinoma-in-situ in 20% or 131 patients and the biopsy diagnosis of invasive cervix cancer in 9.4% or 5 patients. Those with unknown prior cytology were patients

Figure 1



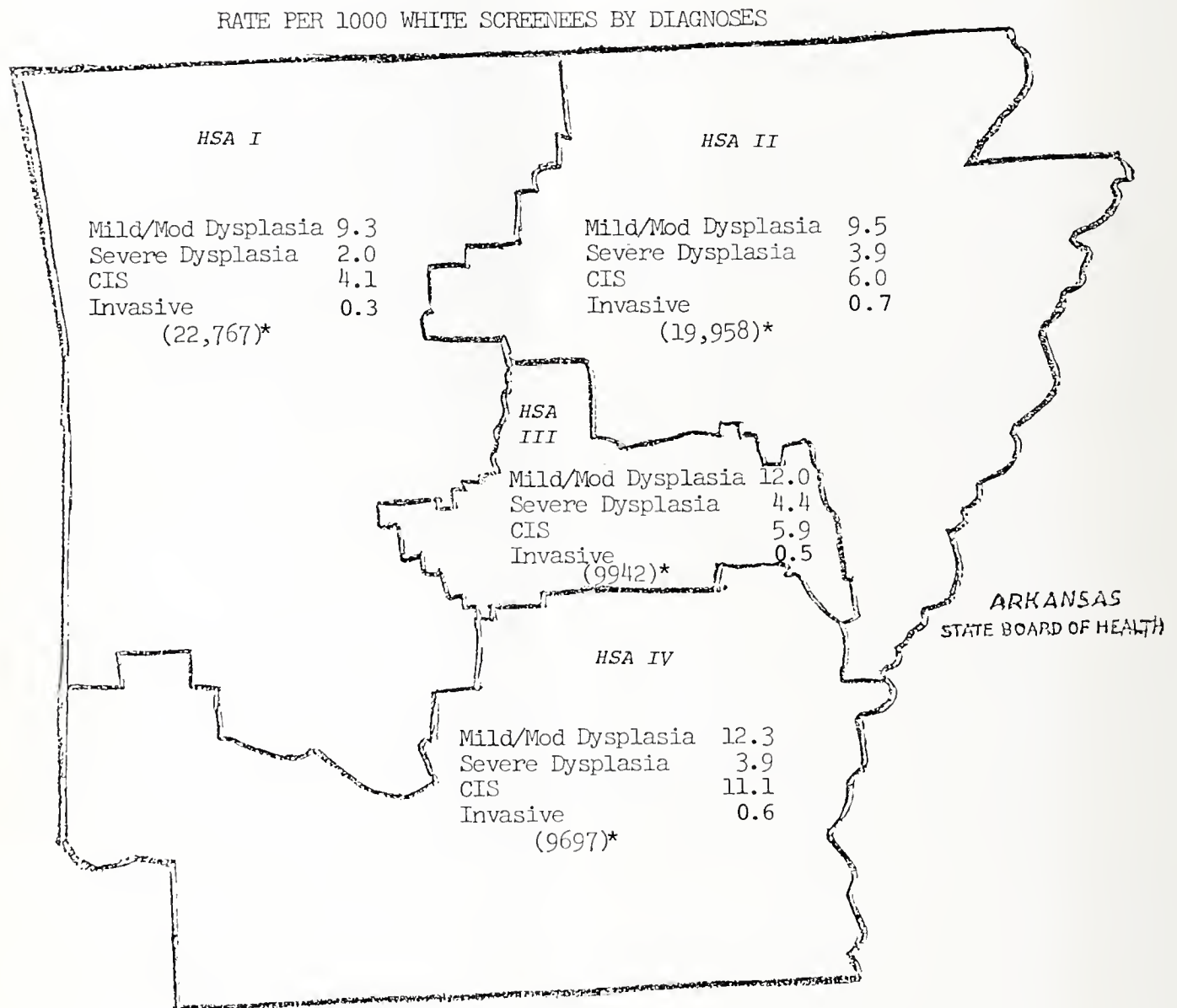


# ARKANSAS CERVICAL CANCER PROGRAM

referred to the clinics by private physicians as a result of abnormal findings.

Table 2 presents the percent of patients by the histological diagnosis according to the gravida status. With an increase in gravida number there is a consistent increase in severity of diagnosis.

Figure 2



\* ( ) Number screened

**TABLE 1**  
**PERCENTAGE DISTRIBUTION OF PAP RESULT**  
**PRIOR TO BIOPSY BY DIAGNOSIS**

	Negative	Unsatisfactory	Inconclusive	Suspicious	Positive	Unknown
Mild/Mod Dysplasia (1295)	4.3	0.1	47.3	42.6	3.8	1.7
Severe Dysplasia (411)	1.9	0.0	28.9	62.7	6.3	0.0
CIS (656)	1.0	0.3	19.9	58.8	19.2	0.6
Invasive Cervical CA (53)	5.6	0.0	9.4	49.0	33.9	1.8

( ) Number

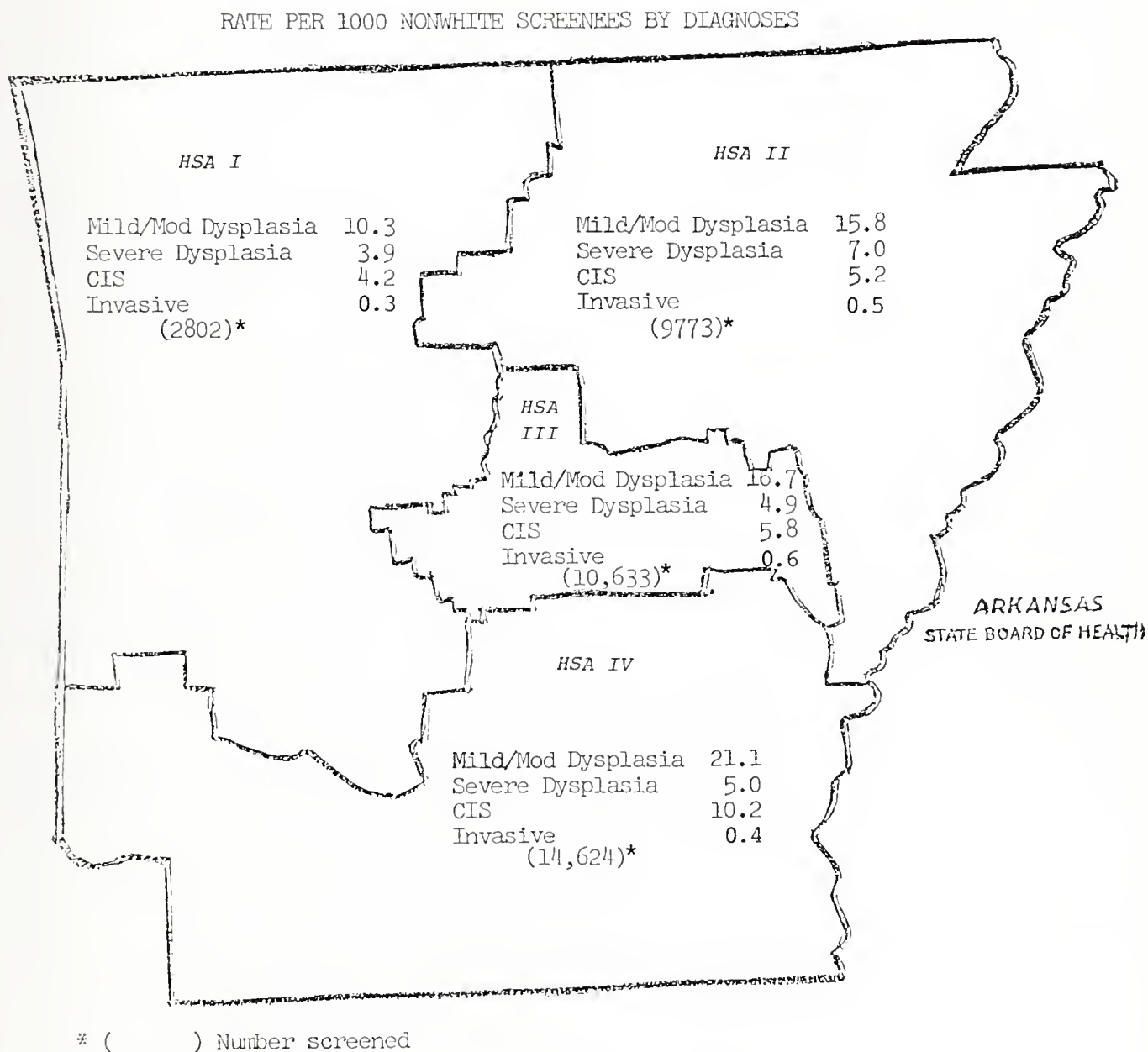
Mod—Moderate

CIS—Carcinoma-in-situ

Table 3 provides the demographic data for the patients and controls studied for frequency of and time interval between smears. Figure 4 shows that those with carcinoma-in-situ or severe dys-

plasia were diagnosed by the time of their eighth smear and by 64 months after their first known cytology examination. For all patients with mild or moderate dysplasia at biopsy, the diagnosis

Figure 3



**TABLE 2**  
**PERCENTAGE DISTRIBUTION BY GRAVIDA**  
**AT THE TIME OF DIAGNOSIS**

Histology Diagnosis	Gravida 0	Gravida 1-3	Gravida > 3
Mild/Mod Dysplasia (1295)	15.9	65.2	18.7
Severe Dysplasia (411)	10.7	65.9	23.2
CIS (656)	5.3	64.6	30.0
Invasive Cervical CA (53)	0.0	60.3	39.7
( ) Number			
Mod—Moderate			
CIS—Carcinoma-in-situ			



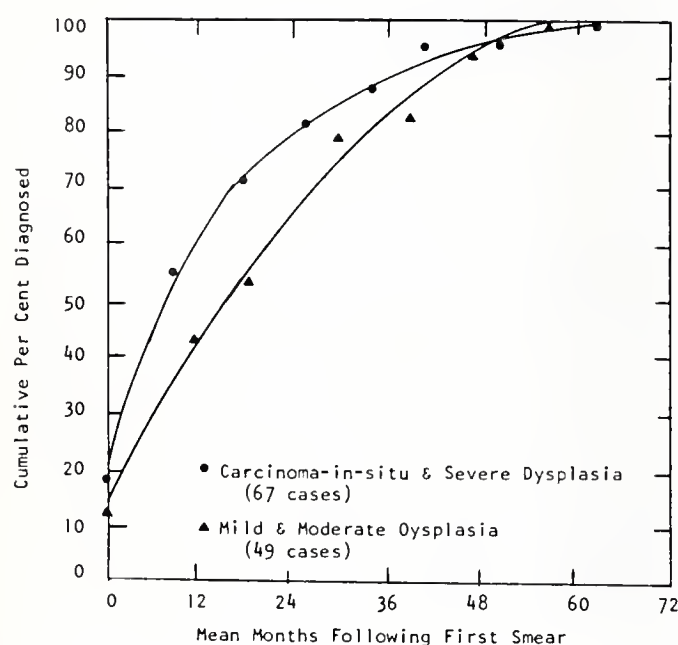
occurred after the seventh smear and by 57 months after the first cytology examination.

For the CIS group, 56.7% (38 patients) were diagnosed no later than the second known cervical cytology examination. Also the second examination was taken within a 10 month interval, on the average, after the first examination. For

the dysplasia group, 53.1% (28 patients) were diagnosed following the first, the second, or the third examination and within 20 months after the first examination.

By comparison, the control patients had one to nine negative examinations (average  $3.0 \pm 1.9$ ) over 94 months (average 30.9 months).

Figure 4



Cumulative per cent of patients diagnosed versus mean number of months following first smear for CIS and 0 patients at each sequential Pap Smear test.

## DISCUSSION

It has been shown that with adherence to strict criteria of satisfactory colposcopic examinations and directed biopsy 80% of cervical conizations can be eliminated.<sup>5</sup> All of the AHD colposcopic clinics (except for the few located in private gynecologists' offices to which AHD patients are referred) were established and the regional gynecologists trained. Thus uniformity of strict colposcopic criteria has been attained. The participating private gynecologists to whom some AHD patients are referred have adopted the same criteria.

One hundred fifty-two consecutive patients who had a diagnosis made by colposcopically directed biopsy and were submitted to further diagnostic study or treatment by conization (71) or underwent hysterectomy (81) were compared for diagnostic consistency.

For 47 of the 71 patients having conization, reasons for this procedure included: additional

**TABLE 3**  
**DEMOGRAPHIC DATA FOR STUDY**  
**AND CONTROL GROUPS**

	CIS		DYSPLASIA		CONTROL	
Race	No.	%	No.	%	No.	%
White	42	62.7	23	47.0	171	57.4
Black	25	37.3	25	51.0	126	42.2
Other			1	2.0	1	0.4
Total	67	100.0	49	100.0	298	100.0
Poverty or Low Socioeconomic	49	73.1	43	69.4	227	76.1
Age (Mean and S.D.)						
First Pregnancy	17.9±	2.9	18.1±	3.1	17.7±	2.7
Cervical Cytology	26.4±	7.2*	24.7±	5.8*	25.6±	6.1**
Number of Pregnancies (Mean and S.D.)	2.7±	2.0	2.3±	1.5	2.5±	1.4
CIS	Biopsy diagnosis of cervical carcinoma-in-situ or severe dysplasia.					
DYS-PLASIA	Biopsy diagnosis of cervical dysplasia of mild or moderate degree.					
*	Age at time of cervical cytology immediately preceding biopsy diagnosis.					
**	Age at time of last recorded cervical cytology.					
S.D.	Standard Deviation.					

Age at first pregnancy and number of pregnancies include 66 of CIS, 46 of Dysplasia and 284 of Control groups.

evidence needed to confirm diagnosis and extent of disease in 12; biopsy showed CIS with question of microinvasion in 10; conization served primarily as treatment in eight; no lesion was seen at colposcopy or transition zone was not completely visualized in six; non-correlation of cytology with biopsy in four; endocervical lesion seen at colposcopy in four; technical difficulty in taking colposcopic biopsy in two; and biopsy produced inadequate tissue for diagnosis in one. No specific reason for conization was given for 24.

In 82 there was complete correlation, 54%. In 27 a more significant lesion was discovered at conization or hysterectomy. Seventeen cases of CIS were diagnosed by conization (10) or by hysterectomy (7) and missed at colposcopically directed biopsy. However, twelve of these had had a severe dysplasia diagnosis, not inconsistent with a diagnosis of CIS. In the remaining five, the cervical cytology examination did not correlate with colposcopy findings. Two with CIS at biopsy had microinvasion at hysterectomy. Two patients with a diagnosis of mild dysplasia at biopsy had severe dysplasia at conization; in one, endocervical leukoplakia had been seen at colposcopy and the other had no correlation between the cytology and colposcopy examination. Two increased from chronic cervicitis to mild or moderate dysplasia.

Excluding the patient with inadequate biopsy tissue, there were 42 with less severe diagnosis at conization or hysterectomy than at colposcopically directed biopsy. Nine reverted from CIS to severe dysplasia, again a not inconsistent finding. Another twenty-four with biopsy diagnosis of CIS reverted to no lesion in seven, chronic cervicitis in four, mild dysplasia in five and moderate dysplasia in eight. For six patients with microinvasive or invasive squamous cell carcinoma diagnoses at biopsy surgical histology readings were: no lesion in one, mild dysplasia in two, moderate dysplasia in two and CIS in one. One each with severe, moderate and mild dysplasia reverted to no lesion, to mild dysplasia and to chronic cervicitis, respectively, at the time of diagnostic or treatment conization or hysterectomy.

Since 80% of AHD screenings are socioeconomically deprived, the likelihood that hospital medical care services would be readily and immediately available for definitive diagnosis by conization

is unlikely for most. The regionalization of the colposcopic clinics has placed an out-patient service within a convenient distance from the residences of all AHD patients. The practicing gynecologist has also been able to attain and maintain proficiency in colposcopic techniques as a result of this program. Need for usage of hospital-based diagnostic efforts has been reduced to about 10-15% of those requiring investigation for an abnormal cervical examination. This has resulted in savings in costs, in time to diagnosis, in absence from work or home responsibilities and in unnecessary consternation caused by delays in diagnosis. In addition, loss to follow-up, which is a particular problem in economically distressed patients with less experience in attaining medical care, has been reduced.

About 20% of patients with either severe dysplasia or CIS were referred for definitive tissue diagnosis after an inconclusive smear. This is consistent with our prior finding,<sup>6</sup> with an estimated 85% follow-up rate, that 14% of patients with inconclusive smears (all read by a single University-based laboratory) and followed for 3½ years came to CIS diagnosis. Dolan<sup>5</sup> reported that 18.5% of CIS patients and 32.5% of severe dysplasia patients were referred for similar degree of cytologic abnormality.

Fifty-three patients, 36 white and 17 non-white, had invasive cervix cancer. Five, not clinically staged, three white and two non-white women ranged in age from 30-71 years. Age range for 30 patients, 21 white and 9 non-white, with Stage Ia disease was 22-71, average 38.9, years old. Ten patients, seven white and three non-white, with Stage Ib cervix cancer averaged 40 years of age at diagnosis, range 20-67 years. Stage II was diagnosed in seven, five white and two non-white, at a mean age of 39.5 years, range 26-52 years. One non-white woman had Stage III cervix cancer diagnosed at age 61 years.

Other cancer diagnoses than of cervix resulted as a follow-up of our screening program for six patients. The diagnoses for five patients were vulvar epidermoid carcinoma, adenocarcinoma of cervix, endometrial adenocarcinoma, adenocarcinoma of the vagina, and transitional cell carcinoma metastatic to urethra. The sixth patient had carcinoma-in-situ of the vaginal cuff, thought to be a new primary cancer, diagnosed 13 years



after hysterectomy and oophorectomy for treatment of cervix carcinoma-in-situ.

Figure 4 shows, for the subsample of patients with diagnoses of either carcinoma-in-situ and severe dysplasia (CIS) or mild and moderate dysplasias (D), how the numbers of diagnoses increase with time and with increasing numbers of cytological screenings. The cumulative percentage is plotted versus the number of months elapsed from the time of the first smear. Actually, the curve for individual patients is approximated by plotting a point corresponding to each sequential smear. The point coordinates are the cumulative percent and the *mean* elapsed time for those persons at that subsequent "Smear number". Therefore, it follows that as time increases, the number of smears increases.

It is worth noting that CIS diagnoses in 6.5 per 1,000 screened, of whom approximately 50% are first-time examinations or repeat after 13 or more months, compares to a rate of 3.8 per 1,000 *new* patients (total patients 8,426) in 1955 found by Stern.<sup>7</sup> In Stern's study only about 20% (10% indigents and 10% elderly pensioners) could be considered economically depressed and only 4% were non-white. Of greater relevance are Christopherson's<sup>8</sup> and Kaiser's<sup>9</sup> findings in groups of women more comparable to ours. On first screening Christopherson<sup>8</sup> found the CIS rate per 1,000 screenees was 3.91 which was reduced to 1.70 per 1,000 at the third screening. Similarly, invasive cervical cancer rates were 3.07/1,000 at first screening and 0.31/1,000 at third screening. In the Tennessee group studied by Kaiser<sup>9</sup> 3.1/1,000 white and 4.0/1,000 black women were found to have CIS while 1.3/1,000 white and 1.8/1,000 black women had invasive cervical cancer at first screening. More study is needed to confirm an increasing incidence of cervical carcinoma. It must be emphasized, however, that our program is indeed reaching the population at high risk as evidenced in the diagnosis rates per 1,000 screening examinations. Recently there have been speculations and evidence presented to both question and support the supposition that cervical cancer is increasing in number and is occurring in a younger population as a result of the changing sexual mores. Our data support the supposition. We found that 41 (19 white and 22 non-white) of 656 women, 6.3%, with histologic diagnosis of CIS were aged 19 years or younger. We also found one woman aged 20 with stage Ib invasive cervix

squamous cell cancer. This patient was pregnant at diagnosis. Subsequent to cesarean section she underwent hysterectomy at which time severe dysplasia was noted. One of the teenage patients with CIS, a 16 year old black girl, was pregnant at the time of histological diagnosis. A conization after delivery showed no significant abnormality. Fifteen percent of all severe dysplasias (22 white and 39 non-white of a total of 411) were aged 19 years or younger. Mild or moderate dysplasias were found in 110 white and 194 non-white teenagers or 23.5% of all 1295 cases.

Our data are in contrast to that of Nealon and Christopherson.<sup>11</sup> They analyzed their data for socioeconomically deprived Kentucky teenagers for two ten-year periods, 1956-1966 and 1967-1977. The earlier period was taken as prior to the "revolutionary change in sexual mores and practices in teenagers." No significant difference in dysplasia rates was found for the two ten year periods. Rates were 0.44 and 1.01 per 1,000 screenees. They found no cervix carcinoma-in-situ. Roughly one-fourth of our screenees were younger than 20 years providing *approximate* prevalence rates of 6.8 per 1,000 for all degrees of dysplasia and 1.6 per 1,000 for CIS. Unfortunately, we do not have data prior to 1975. Our data, however, are consistent with at least four of the studies analyzed by Nealon and Christopherson.<sup>11</sup>

It is of interest that mortality experience from cervix cancer for the twenty-year period 1950-1969 is similar for Arkansas and Kentucky.<sup>1</sup> For white women rates of 8.93 and 10.09 and for non-white women 19.12 and 18.72 were noted for Arkansas and Kentucky, respectively. These data suggest our prevalence rates for CIS and dysplasia would be similar. In recent years, vaginal herpetic lesions appear to be more prevalent, an implicated risk factor. Also possibly contributory is that our patients, by history and anecdotal account, douche frequently, a recently described risk-factor for cervix cancer.<sup>12</sup>

Of more importance and certainly of concern is the finding of severe histologic changes occurring during teenage pregnancy. Occasionally, there is no residual after delivery.

Barclay, *et al*<sup>13</sup> have reviewed the University of Arkansas Medical Center experience with cervix CIS in pregnancy and treatment with primary cesarean hysterectomy. In 32 patients, 12% aged 20 or less and all undergoing their second or more pregnancy, post-operative findings increased

to microinvasive in one, remained CIS in 17, was dysplasia in 7 (same diagnosis for 2) and was downgraded to moderate dysplasia in two and to no residual tumor in 7.

McGowan<sup>14</sup> states that "dysplasia and CIS of the cervix are unrelated to pregnancy and do not disappear after delivery except if the CIS is removed by conization or by trauma associated with labor and delivery". It could also have been removed by excisional biopsy.

While this may be true for many of our cases, recent findings suggest mechanisms which may account for cellular changes with possible subsequent regression. Peritz, *et al*<sup>15</sup> reported a positive association between incidence of CIS and total duration of oral contraceptive use in a well controlled prospective study of a cohort of 17,942 women. Also women taking oral contraceptives have low serum folate concentrations, first reported by Shojania *et al*<sup>16</sup> in 1968. Subsequent studies<sup>17</sup> indicate women taking oral contraceptives have an altered folate clearance from the blood only if their body tissues are not presaturated with folic acid. It is well documented that folic acid deficiency causes cervical cytological abnormalities difficult to distinguish from malignant cells<sup>18</sup> and which revert with folic acid therapy.<sup>19</sup> Pregnancy also increases folic acid requirements. For women whose folic acid intakes are limited by socioeconomic or other circumstances such as seasonal lack of fruits and vegetables, pregnancy or use of oral contraceptives may result in cervical cytological changes indistinguishable from malignant cells. Such cytological changes may then regress when the physiologically increased requirement is lowered by either delivery or discontinuance of the oral contraceptive. Further study is needed to evaluate these hypotheses. We suggest that careful attention be given by the obstetrician and gynecologist to these possible contributory factors in evaluation of women with abnormal cervical cytology.

Schroeder<sup>4</sup> estimated that 268,000 women over 15 years of age had never been screened by cervical cytology examination. As our program has grown rapidly, it is apparent that the limited Arkansas Health Department resources available mandate a rational approach to the frequency of usage of screening. The Walton Report<sup>10</sup> states that there is no rationale in the common practice

in North America to recommend annual cervical smears. This Canadian Report proposed for the "at risk":

(1) An initial smear taken at age 18 on every woman who has had sexual intercourse.

(2) If the initial smear is satisfactory and negative, a second smear should be taken after about a year (to allow for possibility of false-negative sampling or interpretation at the initial smear).

(3) Providing the initial two smears are satisfactory and negative, subsequent smears should be taken at approximately three year intervals until the age of 60. If all such smears have shown no significant atypia the patient can then be dropped from the screening program.

These guidelines may not be adequate for Arkansas as they are for Canada. We have demonstrated that 20% of CIS would be missed in the next two years if screening is interrupted at 36 months (see Figure 4). As our population is not comparable, additional study is indicated to develop a rational approach to usage of cervical cytology screening. The work presented here is offered as a base from which such guidelines may be derived.

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# Medical Grand Rounds:

## Extracranial Carotid Artery Disease

Thomas D. Cain, M.D.,\* James S. Wood, M.D.,\* and Owen W. Beard, M.D.\*\*

### INTRODUCTION

Extracranial carotid artery disease is a medical problem which will confront almost every physician at some time or other. Many questions are raised in the course of the management of an individual with this problem. Which diagnostic studies should be done in the patient who has an asymptomatic bruit over his neck vessels? What should be done for the patient who experiences transient attacks of neurological deficits? Should evaluation of the extracranial carotid arteries be performed in the individual who has had a completed stroke? What are the potential hazards of extracranial artery diagnostic studies? What is the role of surgery in carotid artery disease?

The purpose of this review is to provide answers to some of these questions and hopefully furnish some guidelines for the physician faced by these perplexing problems. In order to accomplish this we will review the signs and symptoms of carotid artery disease, discuss the incidence and etiology of cervical bruits, and discuss the natural history of extracranial carotid artery disease. In addition, the methods used and risks associated with extracranial artery evaluation and the role of both medical and surgical management in the treatment of patients with transient ischemic attacks (TIA) will be reviewed.

### SIGNS AND SYMPTOMS OF CAROTID ARTERY DISEASE

Carotid artery disease may be asymptomatic or may present with any of five basic symptoms or findings: headaches, transient cerebral ischemia, unilateral blindness (amaurosis fugax), bruits, or brain infarction. Headaches attributed to carotid artery disease are unilateral and on the same side as the arterial occlusion. These headaches have been attributed to shunting of blood around the obstructive lesion through the external carotid system with consequent painful dila-

tation of collaterals. Transient cerebral ischemia (TIA's) are episodes of sudden painless functional loss of a portion of the nervous system that completely resolves within 24 hours. TIA's can be subgrouped into two categories, carotid and vertebrobasilar. The predominant symptoms of carotid artery TIA's in order of frequency are: hemianesthesia, hemiparesis, dysphasia, visual field disturbance, and vertigo. The major symptoms of vertebrobasilar TIA's are: vertigo, visual field disturbance, "drop attacks," dysarthria, and hemianesthesia.<sup>1</sup> The localization of TIA's to either the carotid or vertebrobasilar system may be difficult because of concurrent lesions in both systems with a resultant overlap of symptoms. Transient unilateral blindness or amaurosis fugax is the only feature that can clinically distinguish carotid artery stenosis from occlusion of the middle cerebral artery.

The bruit associated with extracranial carotid arterial occlusive disease is typically systolic and heard best over the carotid bifurcation near the angle of the jaw. It is highly localized and decreases in intensity quickly as one listens inferiorly. Hammond, et al<sup>2</sup> examined 1,000 consecutive subjects normal for the presence of a cervical bruit. The incidence was noted to vary with age and was found to be highest in the younger age groups and to be diminished in the older age groups. Of subjects under the age of 5, 87% had cervical bruits, then the incidence progressively declined until about age 35 at which point it stabilized at a level of approximately 10% of the population examined. Seemingly 75% of normal persons have disappearance of previously audible cervical bruit between ages 5 to 60.

Atherosclerosis of the internal carotid artery causes 90% of cervical bruits in the elderly with most of the remaining 10% being due to atherosclerosis of the external carotid artery. The transmitted cervical bruit from a primary murmur heard over the base of the heart and the bruit produced by compression of the arteries in the cervical outlet syndromes can be easily identified by careful physical examination. Other rare

\*Fellows in Geriatric Medicine.

\*\*Professor of Medicine, Chief, Geriatric Service.

University of Arkansas for Medical Sciences and Little Rock VA Medical Center, 300 E. Roosevelt Road, Little Rock, Arkansas 72206.

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causes of cervical bruit are: idiopathic, venous hum, congenital structural anomalies of the carotid arteries, Takayasu's granulomatous arteritis and thyroid bruit.<sup>3</sup>

The mechanisms by which atherosclerotic plaques cause ischemia and infarction of the brain are incompletely understood. Three basic concepts predominate. The most traditional of these is the mechanical decrease of carotid artery perfusion pressure and flow. The other two hypotheses are relatively more recent. One states that the atherosclerotic lesion may serve as a substrate for thrombogenesis and the second that the lesion may serve as a source of microemboli. These microemboli have been postulated to consist of fibrin, platelets, and/or cholesterol crystals. Therapy for carotid arterial disease has therefore been based on these three concepts. The surgical carotid endarterectomy is an attempt to deal with the mechanical decrease of perfusion pressure and flow as well as a method to remove lesions potentially serving as substrate for thrombogenesis or a source of microemboli. Medical therapy with anticoagulants has been based on the theory that the atherosclerotic lesions serve as loci for thrombogenesis and that anticoagulants may also prevent fibrin microemboli. More recently, interest has developed in antiplatelet therapy in an attempt to abolish platelet microemboli. Treatment including attempts to lower serum cholesterol levels has been, in part, a response to the theory that some brain ischemia and infarction is due to cholesterol deposition and microemboli.

#### **NATURAL HISTORY OF CAROTID ARTERY DISEASE**

Unfortunately, good studies are lacking concerning the natural history of carotid arterial disease. Humphries, et al<sup>4</sup> retrospectively reviewed one hundred sixty-eight patients with asymptomatic carotid bruits who had been subjected to angiography and shown to have a proven 50% or greater atherosclerotic stenosis of one internal carotid artery. The average period of observation was 32 months and during that period 18% of the subjects developed significant neurologic deficits with 82% remaining asymptomatic. For purposes of examining the natural history of the asymptomatic carotid bruit this was far from a perfect study because the 168 patients chosen were a highly selected group and the information was extracted retrospectively. Despite the short-

comings of this study, it would suggest that surgery is not required for the patient with an asymptomatic carotid bruit.

The Joint Study of Extracranial Arterial Occlusion<sup>5</sup> conducted between 1962 and 1968 addressed the question of the natural history of extracranial carotid arterial disease, which is producing transient ischemic attacks? One hundred forty-five subjects with TIA's attributed to the carotid or vertebrobasilar systems were treated non-surgically and were observed for an average of 42 months. During the period of observation 28% became asymptomatic, 47% continued to have TIA's, 6% had a nonfatal cerebrovascular accident, 6% had a fatal cerebrovascular accident, and 12% died of other causes. The other causes of death were predominantly cardiovascular in nature.

#### **METHODS OF EVALUATING EXTRACRANIAL CAROTID OCCLUSIVE DISEASE**

Many methods of evaluating the extracranial carotid artery for stenotic or occlusive lesions have been proposed, but for purposes of this discussion only three of these methods will be examined: carotid angiography, oculoplethysmography (OPG), carotid phonangiography (CPA).

Carotid phonangiography is performed with a special microphone designed to sense carotid bruits and display them on an oscilloscope. Such analysis documents the bruit and its location and can be used to follow the clinical status of the lesion. Usually three areas of the carotid artery are examined: the angle of the jaw, the mid-neck area, and the base of the neck. Bruits demonstrable only in the two high positions are generally of carotid origin. Bruits demonstrated in all three positions usually originate in the heart or great vessels as they branch from the aortic arch. The duration of the bruit indicates the degree of restriction in the carotid artery. A false negative CPA could be predicted in subjects with total occlusions and no blood flow in the carotid artery. To rule out false negative results, OPG is usually used in conjunction with CPA.

Oculoplethysmography is based on the observation that distal arterial pulsations are delayed if there is proximal stenosis severe enough to cause a decrease in arterial flow. Atherosclerotic plaques may be present and not significantly decrease flow thus resulting in a false negative OPG. Frequently these plaques will cause a bruit and may

be detected by CPA. The logic of combining OPG and CPA is that each study augments the other by detecting false negative results. In oculo-plethysmography the ocular pulsations are detected with small caps similar to contact lenses. Since ocular pulsations are due to pulsations of the ophthalmic artery which is a branch of the internal carotid, the ocular pulsations are a measure of internal carotid pulses. Densitometers are applied to the ear lobes to measure the external carotid pulses. The pulsations of the eyes and ear lobes are recorded simultaneously and compared. A decrease in flow will be detected as a delay in the pulse wave distal to an obstructive lesion.

The diagnostic accuracy of the combination of OPG and CPA is good. If both studies are in agreement, that is, if both studies are positive or both studies are negative, the accuracy is 96%. In this situation the false negative rate is 2.5%, and the false positive rate is 1.5%.<sup>6</sup>

There is evidence from autopsy and surgical studies that carotid angiography tends to overestimate the degree of carotid stenosis. When intraoperative pressure and flow studies are done with an electromagnetic flow meter and correlated with OPG, CPA and angiography, OPG is as accurate as carotid angiography. When used alone, OPG correlated with the intra-operative flow study 87% of the time while angiography correlated 85% of the time. OPG is thus a very valuable screening tool, but does not supplant angiography. In this study, OPG had a 10% false negative rate which was approximately double the false negative rate of angiography.<sup>7</sup>

The complications of methods for evaluating the carotid artery must be taken into consideration. OPG and CPA are quite safe with no known contraindications and no complications reported in a series of 1,400 tests.<sup>8</sup> Cerebral angiography is often a necessary procedure if definitive localization of carotid occlusive disease is necessary for a surgical approach, but is associated with a fairly high risk of complications. One hundred forty-seven consecutive patients who received cerebral angiography via a femoral approach were evaluated to identify risk factors contributing to cerebral complications associated with angiography. Of these 147 patients 18 (12.2%) had a cerebral complication, 8 of which (5.2%) were permanent. Twenty-one possible risk factors were submitted for computer-assisted

multivariate analysis. Two risk factors correlated with an increased risk of complications: number of previous transient ischemic attacks ( $p < 0.01$ ), and arterial stenosis of 90% or more ( $p < 0.05$ ). Three risk factors were of marginal significance: diabetes, female sex, and number of selected injections. The age of the patient does not appear to be a risk factor.

Using these five risk factors, a discriminate function can be calculated with the following formula:  $D = (8 \times \text{No. TIA's}) + (6 \times \text{No. arteries catheterized} + (14 \text{ if diabetic, } 0 \text{ if not}) + (11 \text{ if female, } 0 \text{ if male})$ . When the discriminate function score was greater than 55, 77% of the subjects had a complication associated with cerebral angiography. When the discriminate function score was less than 55, 98% of the subjects had no complications associated with cerebral angiography. Unfortunately, patients in whom the study is most frequently indicated tend to be those at greatest risk.<sup>9</sup>

#### TREATMENT OF THE PATIENT WITH TIA

Although the diagnostic methods currently in use for the evaluation of patients with TIA have improved greatly, the methods of treatment of the patient with TIA are less clearly defined. Once the patient with a history of TIA progresses to a completed stroke with a fixed neurologic deficit, the treatment modality is generally agreed to be rehabilitation therapy. The means of slowing or preventing this progress in the patient with TIA remains an area of great controversy. A comparison of whether surgical repair of the obstructing carotid lesion or treatment by sound medical regimens results in improved patient survival and decreased morbidity (strokes) has not been made. However, the individual therapeutic modalities have been examined and several important clinical guidelines can be gained from a review of these studies.

The important aspects of the natural history of patients with TIA's and the surgical and medical forms of treatment have been reviewed.<sup>10,16,28</sup> In evaluating these reviews it is important to assess the author's definition of TIA and adherence to that definition. The manner which patients are selected and the extent of clinical evaluation before the therapy is initiated, as well as whether the study is retrospective or prospective with concurrent controls, are all important. In addition, the author's concept of the natural



history and suspected pathophysiologic mechanism should be assessed.

Some points, relevant to the design of therapeutic regimens, concerning the natural history of TIA's should be made. During the first year following the onset of TIA's, there is an approximately 20% risk for stroke. This decreases to 5% per year thereafter. This fact must be taken into account in determining the type and duration of therapy in certain patients. The mortality rate for TIA patients who have a stroke is between 5% and 10%, thus influencing the risk involved in the therapeutic regimen. Of those patients surviving the stroke, most will ultimately die from vascular causes;  $\frac{1}{3}$  from subsequent stroke and  $\frac{2}{3}$  from other vascular disorders, primarily myocardial infarction. This fact should raise some questions concerning the use of death as an end-point in the measurement of treatment efficacy for TIA's. Also, patients with carotid artery disease appear to be more prone to experience stroke than patients with vertebrobasilar artery disease. Most studies recognize this fact and tend to confine the results of their studies to carotid artery lesions. Age, sex, race, and perhaps the frequency of TIA's demonstrate no definite relationship between the risk for the development of a stroke in patients with TIA.<sup>10</sup> Finally, the techniques and the skills of the practitioners, both surgical and medical, have tended to change dramatically since the studies were initiated.

#### **SURGICAL TREATMENT FOR THE TIA**

Surgical therapy for stroke has been evaluated by the Joint Study of Extracranial Cerebrovascular Disease<sup>11</sup> which began in 1959. The original goals of these studies were: to determine the incidence of extracranial arterial disease in patients with symptoms of cerebrovascular disease, to evaluate the risks and advantages of cerebral angiography,<sup>12</sup> and to determine the efficacy of arterial reconstructive surgery in modifying the natural history of the disease.<sup>13-16</sup> Formal data collection began July 1, 1961 with 24 institutions finally being involved in the cooperative effort. A controlled prospective study was initiated comparing surgical and non-surgical treatment regimens. The results of surgery in the treatment of extracranial cerebrovascular disease were assessed with respect to its influence on altering mortality, on improved quality of survival, and on the prevention of stroke and TIA's. Because of

the high initial surgical mortality, stroke prevention independent of death could not be analyzed. Non-surgical therapy constituted "the best possible medical therapy" but was otherwise not defined and was, therefore, quite variable. Surgical mortality varied markedly between institutions but decreased during the period involved in the study.

The results of this study<sup>16</sup> show no statistically significant difference between surgically and non-surgically treated groups when taken as a whole. However, conclusions as to the efficacy of surgical therapy now are highly dependent on the individual institution where surgical therapy is performed. The study did allow certain conclusions to be made. Angiographic data showed that 25% of the patients were not surgical candidates having either no significant lesion or surgically inaccessible lesions(s). An additional 33% had combined intra and extracranial lesions. Thus, nearly 60% of the potential study candidates were suitable only for medical therapy. Patients with heart disease alone were better managed medically because of an unacceptably high surgical mortality. Otherwise, combinations of elevated blood pressure and heart disease showed no statistically significant difference between surgical and non-surgical therapy. Patients with bilateral carotid stenosis showed a statistically significant advantage favoring surgery when surgery was performed on the artery supplying the area of the brain responsible for the symptoms. Patients with carotid stenosis plus occlusion of the opposite carotid artery showed a statistically significant difference favoring medical treatment, apparently due to an unacceptably high surgical mortality. A capsule summary of the overall data is shown in Table I.

Blaisdell has reviewed the surgical therapy data<sup>16</sup> for TIA and concluded that any benefit derived from surgical intervention in preventing subsequent stroke is difficult to substantiate if death is chosen as an end-point, because the majority of deaths in stroke are due to cardiovascular disease and not stroke. He was also unable to make a useful comparison between surgical and non-surgical therapy for the true incidence of stroke due to the high surgical mortality encountered in the study. Blaisdell's data is derived from the cooperative study data covering many institutions with variable morbidity/mortality statistics.

The Joint Study of Extracranial Cerebrovascular Disease<sup>14</sup> has developed criteria to aid in determining surgical candidates, but the choice to perform surgery appears to remain one of clinical judgment. The lesion must be surgically accessible from the chest or neck avoiding thoracotomy because of the attendant high operative mortality. Surgery should not be performed immediately after the onset of the acute neurologic deficit because of high surgical mortality and frequently the conversion of ischemic to hemorrhagic cerebral infarction after revascularization. Surgery should not be considered earlier than two weeks and preferably after resolution of the abnormality on isotopic brain scan indicating return of vascular integrity. Complete occlusion of both the vertebral and internal carotid arteries should not be considered operable. Lesions compromising the lumen by more than 50%, especially with ulceration evidenced by angiography, are felt to be significant and should be operated upon. Patients should not be considered as surgical candidates if the operative risk is more than 10% as frequently determined by underlying cardiovascular and pulmonary disease.<sup>14</sup>

Patients with a life expectancy of less than 6 months are not considered surgical candidates. This usually rules out consideration of patients with severe neurologic deficits and significant heart disease.

#### MEDICAL THERAPY FOR THE TIA

Although surgical therapy may be beneficial for certain selected patients, it is by no means a universally beneficial therapy. This leaves the management of a large number of patients in the hands of the internist or neurologist.<sup>18</sup> Medical therapy can be divided into three major categories:

- 1) Antiplatelet therapy
- 2) Anticoagulant therapy
- 3) Thrombolytic therapy

Antiplatelet therapy has involved the use of three agents: dipyridamole, sulfinpyrazone, and acetyl salicylic acid (aspirin). Dipyridamole was evaluated by Acheson, et al (19) in 1969 at two dosage levels (initially 400 mg po q day for 6-24 months, then 800 mg po q day when the lower dose was found to be ineffective) in 169 patients who had partially or completely recovered from an ischemic cerebral event. There was no significant evidence that dipyridamole altered the frequency of TIA's, ischemic stroke, or death. Pertinent criticisms of this study include a relatively small patient population, a short period follow-up, and a low incidence of the important end-points of stroke or death compared to other studies. Dipyridamole does, however, appear to be effective in the prevention of embolic cerebrovascular accident (CVA) when used in combination with anticoagulants in patients with prosthetic heart valves.

Sulfinpyrazone was evaluated in three studies. Evans<sup>20</sup> in 1973 evaluated 20 patients with amaurosis fugax and TIA with sulfinpyrazone vs. placebo therapy. The study revealed an improvement in the eye symptoms but makes no comment regarding stroke or death. Blakely and Gent<sup>21</sup> in 1975 evaluated institutionalized elderly males and noted a reduction in death due to cerebral ischemic disease. However, there are many criticisms of the latter study and there is reluctance to accept the results of the study as valid. The third study details the results obtained by the Canadian Cooperative Study<sup>22</sup> in 1978. In a large group of patients, sulfinpyrazone (300 mg po QID) appeared to produce no statistically significant reduction in ischemic episodes,

**TABLE 1**  
**Results of Surgical Treatment of TIA**  
**(Abstracted from JAMA 211:1993; 1970,**  
**Fields, et al)**

	Surgical	Non-surgical
1. Number of cases initially assigned to group	169	147
2. Number of initial deaths (operative or medical)	6	1
3. Number of strokes before (operative or medical)	13	1
4. Number of patients for Follow-up	150	145
5. Clinical status during follow-up		
—No symptoms	*70 (46.6%)	*41 (28.2%)
No. of pt's		
No. pt's in row #4		
—TIA's only	54	68
—Non-fatal stroke	3	9
—Fatal stroke	3	9
—Deaths due to other causes	20	18
6. Clinical status of follow-up including operative period		
No Symptoms	70 (41.4%)	41 (27.2%)
No. of pt's		
No. pt's in row #1		
—TIA only	54 (31.9%)	68 (46.2%)
—Non-fatal stroke	16 ( 9.4%)	10 ( 6.8%)
—Deaths (total)	29 (17.1%)	28 (19.0%)

\*Significantly different ( $p < 0.01$ )



stroke, or death nor did it augment the effects of aspirin therapy. The lack of evidence that sulfinpyrazone is effective as a treatment for TIA does not appear to support a firm recommendation for this form of therapy.

The role of aspirin as a therapeutic agent in the treatment of TIA has also recently been reported. The American Study Group under Fields, et al<sup>24</sup> found that aspirin did not appear to prevent patients with TIA from developing a stroke. They did report that aspirin affected the frequency of TIA's in a favorable fashion especially if there was an antecedent history of multiple TIA's and if the anatomic carotid lesion is on the side appropriate to the TIA symptoms. This study compared aspirin vs. placebo treatment groups. Only patients with the carotid-type of TIA's were admitted to the study. The patient's most recent TIA had to have occurred not more than 3 months prior to admission to the study. However, following baseline studies, including an arteriogram, a clinical decision was made regarding the need for surgical intervention. Thus, about 50% of the patients admitted to the study became eligible for surgery and many were treated by this form of therapy. The results of aspirin therapy were graded as favorable, unclassified, or unfavorable. Unfavorable outcomes included death due to cerebral infarction or other cardiovascular disease, death due to intracerebral hemorrhage, non-fatal cerebral infarction, retinal infarction, or an excessive ratio of TIA's. Unclassified cases were those who were lost to follow-up, felt ill on the study drugs or withdrew from the study, refused or were unable to cooperate by returning for follow-up visits, failed to take the study drugs for at least 6 weeks or were withdrawn for other medical reasons.

The evaluation of the gross data revealed unfavorable outcomes in 34 of 77 cases (44.2%) in the placebo treated group as compared with 15 of 78 cases (19.2%) in the aspirin treated cases (a significant reduction). Two subcategories of patients from the above data subsequently were analyzed. By categorizing patients with single TIA's vs. multiple TIA's prior to admission to the study, the cumulative probabilities of an absolute end-point (infarction and/or death) occurring showed a difference between aspirin and placebo treated patients in the group with multiple antecedent TIA's favoring aspirin therapy. However, when viewed as only favorable, unfavorable,

or unclassified as in the gross data, this finding is not so obvious. A second category consisted of anatomic site and its correlation with TIA symptoms. The reduction in unfavorable outcome is statistically significant only when aspirin is used in patients where the anatomic carotid lesion and the symptoms of TIA are on the same side.

The Canadian Study Group<sup>22</sup> examined aspirin (325 mg po QID) and sulfinpyrazone (200 mg po QID) alone and in combination against placebo. The results of the sulfinpyrazone trials have already been described. They found that aspirin was effective in reducing the risk of TIA's, stroke, and death, and that there was a sex dependent effect favoring males. Patient selection was similar to that employed in the American Study (24), however, no surgical intervention was made. When examining the three major end-points of continued TIA's, stroke, and death, a 19% reduction in risk was noted in the aspirin treated group. When the "harder" end-points of stroke and death are examined alone the risk reduction is greater at 31%. Note that the Canadian Studies define risk reduction as an end-point rather than classifying patients according to favorable, unfavorable, or unclassified end-points making direct comparison difficult.

The causes of the differences between the American and Canadian studies are hard to define. One may be that in the American Study the selection of patients for surgical intervention was based upon clinical judgment. A convincing statement for aspirin therapy can only be made with respect to reduction in TIA's, but not so easily with the parameters of stroke and death. The effect due to sex differences has been noted previously<sup>26</sup> in studies using aspirin in the prophylaxis of deep venous thrombosis. The mechanism explaining this sex difference has not been elucidated and indicates a possible deficit in our understanding of the basic pathophysiologic mechanisms of cerebrovascular disease.

Anticoagulant therapy has both adherents and critics. The adherents, represented by Millikan,<sup>27</sup> note a decrease in the frequency of TIA's in patients treated with anticoagulants. He explains that cerebral hemorrhage, the most feared complication of anticoagulant therapy, is a part of the natural history of TIA and feels that anticoagulants add only slight risk of this complication. He does emphasize that anticoagulant therapy is risky in even the best hands and requires

an accurate diagnosis of the type of cerebrovascular disease, an astute and careful physician following the patient's therapy, and the availability of accurate and reliable laboratory support.

Brust<sup>28</sup> representing those critical of anticoagulant therapy reviewed 12 studies of these agents and commented on numerous problems in each of the studies. These criticisms include small numbers of patients, retrospective study design, lack of randomization and controls, and lack of an accurate definition for the diagnosis of TIA. Three studies do not state whether anticoagulants affect the frequency of TIA's, 5 show a decreased frequency of TIA's, 3 show no change, and 1 reveals an increased frequency of TIA's. Any hard conclusions about anticoagulant therapy appear tentative at best and strong recommendations for the use of anticoagulants in TIA are not warranted.

The Joint Committee for Stroke Resources<sup>17</sup> also reviewed the anticoagulant studies and concluded that there was no reduction of mortality. Only the non-random trials seemed to indicate a beneficial effect in reducing stroke incidence. The benefits of anticoagulants in reducing the frequency of TIA's were equivocal, and the possibility of a rebound increase in TIA's after anticoagulant withdrawal remains unanswered.

A third potential medical therapeutic agent is thrombolytic therapy. This group of agents was also reviewed by the Joint Committee for Stroke Resources.<sup>17</sup> The data so far obtained in the use of this treatment modality in cerebrovascular disease is limited and any conclusions about its potential benefit would be premature.

### CONCLUSIONS

The first conclusion, and probably most important, is that there does not appear to be an effective, proven therapy that can be generally applied to *all* patients with TIA's. The exercise of clinical judgment, therefore, is most important in the treatment of the patient with TIA's. Guidelines for the management of the patient with TIA has recently been developed.<sup>29,30</sup> Tentative recommendations for the treatment of patients with TIA include the following:

1) Surgical therapy for selected patients with carotid artery lesions may be indicated. An initial surgical mortality, often times not compensated for in the post-operative course, can be anticipated. The results are highly dependent on the experience of the surgical team and

the medical support in the post-operative period. However, the decision of surgery vs. medical management for any patient, as well as which patients should be treated cannot be determined through studies so far made and remains in the realm of clinical judgment.

2) Aspirin appears to be an effective antiplatelet treatment agent in reducing frequency of TIA's in men. However, validation of its efficacy in the reduction of subsequent stroke or death remains undetermined. The absence of any demonstrable benefit in women remains unexplained, but does emphasize the need for a better understanding of the pathophysiologic mechanisms in TIA. 1300 mg of aspirin has recently been approved by the FDA as "safe and effective for reducing the risk of recurrent TIA in men who have had transient ischemia of the brain due to fibrin platelet emboli."<sup>31</sup>

3) Anticoagulant therapy may be indicated for a carefully selected group of patients provided adequate physician and laboratory support exists,<sup>29</sup> but has remained a controversial treatment modality accompanied by a risk of increased morbidity for the patient.

4) Several unanswered questions about the treatment of TIA remain:

- a) Is there an appropriate therapy for women and for men who are not benefitted by aspirin and are not surgical candidates?
- b) Is there an appropriate therapy for vertebralbasilar TIA's?

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## ELECTROCARDIOGRAM

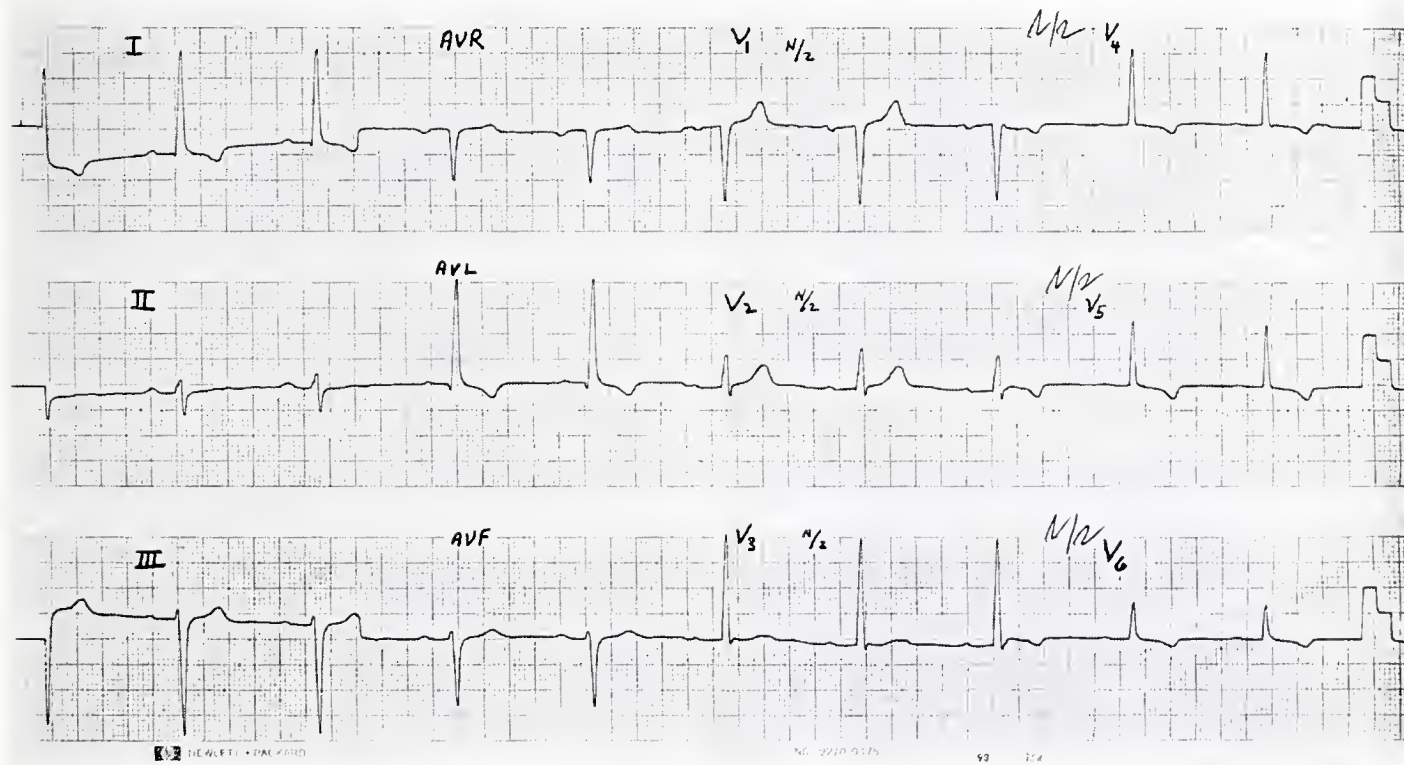
## OF THE MONTH

The Department of Cardiology, University of Arkansas College of Medicine

(See Answer on Page 339)

**HISTORY:** Mr. J. is a 45-year-old asymptomatic man on no medications who has presented for routine evaluation of his heart murmur. His physical examination reveals a blood pressure of 180/40 mmHg and a murmur of aortic regurgitation. A chest film shows cardiomegaly without signs of decompensation. His ECG is shown. Which of the following statements are true and which are false?

1. The patient's history, physical, chest film, and ECG are most consistent with acute aortic regurgitation as opposed to chronic aortic regurgitation.
2. The ECG is consistent with left ventricular hypertrophy.
3. The ECG changes are of no prognostic value in predicting survival.



John W. Watson, M.D.

Assistant Professor

Division of Cardiology

University of Arkansas for Medical Sciences

4301 West Markham

Little Rock, Arkansas 72201





## Painful Non-Union of Lateral Malleolus Fractures: Three Case Reports

I. Leighton Millard, M.D.\*

This month's Orthopedic presentation is a report of three unusual cases. First, a discussion of the injury. Fracture of the lateral malleolus, alone or with other injuries, is a common occurrence. Non-union of this fracture is a very uncommon occurrence. In the 20 year Orthopedic experience of this author, these cases represent the first of this type problem. In the 5th Edition of Campbell's Operative Orthopedics,<sup>1</sup> Burwell and Charnley, Müller, and the Swiss AO Group are quoted as advising open reduction and internal fixation as standard treatment for acute lateral malleolus fractures; however, no mention is made of treatment of non-union of lateral malleolus fractures.

In a study of ankle fractures by Wilson and others in New York,<sup>2</sup> 600 cases of bimalleolar fractures were reviewed and 55 patients were examined. They reported no cases of non-union of fractures of the lateral malleolus. Rockwood and Green in their book "Fractures"<sup>3</sup> (1975) give very little attention to this non-union stating only: "... It is very rare, although x-ray evidence of fibular union is extremely slow to appear". The key to diagnosis of non-union in this bone appears to be the presence of long term pain, tenderness and swelling rather than x-ray findings. It is difficult to understand how a non-union in a largely non-weight bearing bone could be a significant problem. In my opinion, difficulties occur not because of weight bearing but as a result of muscle and ligament forces acting on

the fracture fragment during strenuous activities, especially those involving twisting of the ankle and foot.

It is a commonly accepted maxim that the lateral malleolus is not important in weight bearing, acting mainly as an anchor for muscles and ligaments and to maintain a stable ankle mortise. The articulation between the lateral malleolus and the talus probably affords a small amount of support to the body weight. This has not appeared to be of practical importance in the past in treating fractures in this area.

Most lateral malleolus fractures occur because of external rotation and abduction forces on the ankle. In at least one of the cases (#3) reported here, it appears that forward displacement of the proximal fragment has occurred, with interposition of soft tissue playing an important role in the development of the non-union. In each of the other two cases, the cause of the non-union is not readily apparent, at least to me.

Closed reduction and plaster immobilization is considered adequate treatment for isolated fractures of the lateral malleolus. It appears that in these three cases, muscle and ligament stresses, and possibly relative medial ankle joint ligament weakness, have interfered with healing and produced symptomatic fibrous or non-unions.

### CASE #1

A 31-year-old white male suffered an oblique fracture of the left lateral malleolus in early January of 1979. (Fig. 1) One of my associates, after ascertaining that there was no deltoid liga-

\*Little Rock Orthopedic Clinic, P.A., 9500 Lile Drive, P. O. Box 5270, Little Rock, Arkansas 72215.

ment tear, treated the injury with a plaster splint and non-weight bearing for one week. A walking cast was then applied and continued for five weeks. The patient was then allowed to bear weight as tolerated without plaster immobilization. Because of the persistent symptom of lateral pain and the presence of swelling on the lateral aspect of the left ankle, a diagnosis of non-union was made in May of 1979. (Fig. 2) Surgical treatment was done. The diagnosis was confirmed at surgery and the fracture was bone-grafted and compression plated. (Fig. 3) When last seen in August of 1979, the patient's symptoms were relieved. Full healing may not be present for 3-6 months.

## CASE #2

A 56-year-old white female was first seen and treated by the author in April of 1979. A bimalleolar fracture of the left ankle was immobilized

by open reduction and screw fixation of the medial malleolus fracture and intramedullary pinning of the lateral malleolus fracture. (Fig. 4) A short leg cast was also applied and continued for five weeks. There was no evidence of infection. The lateral malleolus pin was removed at seven weeks after surgery, in the office. The patient then began full weight bearing. Because of persistent pain and swelling of the lateral ankle, she was not allowed to return to her standing-type work until 5½ months following surgery. Even then she was unable to work because of contained difficulties, and, six months after injury, a diagnosis of non-union (possibly fibrous union) was made. (Fig. 5) Surgical correction is planned for November of 1979.

## CASE #3

A 24-year-old white policeman, an active reservist in the Airborne National Guard, received

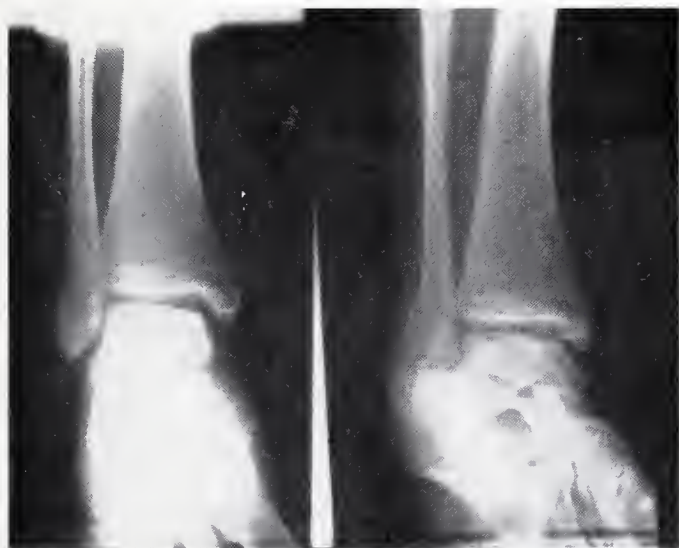


Figure 1.  
Case 1: Left ankle x-ray on day of injury, January 1979.



Figure 3.  
Case 1: Left ankle x-ray, post operative, May 1979.



Figure 2.  
Case 1: Left ankle x-ray, May 1979.



Figure 4.  
Case 2: Left ankle x-ray after surgery, April 1979.



an injury to his left ankle while parachuting at Fort Benning, Georgia in April of 1979. A diagnosis of fracture of the left lateral malleolus was made and a long leg cast was applied. The patient was not allowed to bear weight on the extremity until June, when the plaster immobilization was removed and walking permitted. (Fig. 6) He ex-

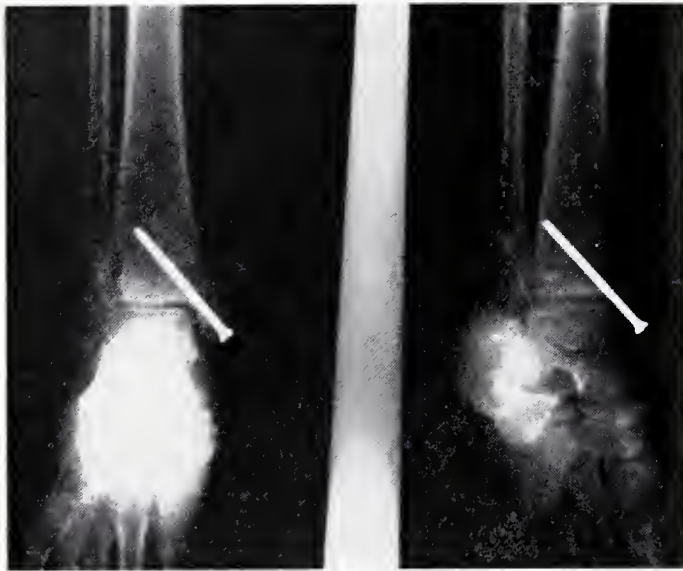


Figure 5.  
Case 2: Left ankle x-ray, October 1979.



Figure 6.  
Case 3: Left ankle x-ray, June 1979.

perienced no unusual symptoms until he resumed his conditioning program of running five miles a day. He then developed pain, swelling, tenderness and redness at the fracture site. A clinical diagnosis of non-union was made. (Fig. 7) Since the patient desires to continue his running and parachuting activities, surgical treatment is planned in November of 1979.

#### SUMMARY

These three cases have been discussed to point out that complications can appear in the care of a fracture that is usually simple to diagnose and treat.

A follow-up report on the results of the surgical treatment of cases #2 and #3 is planned.

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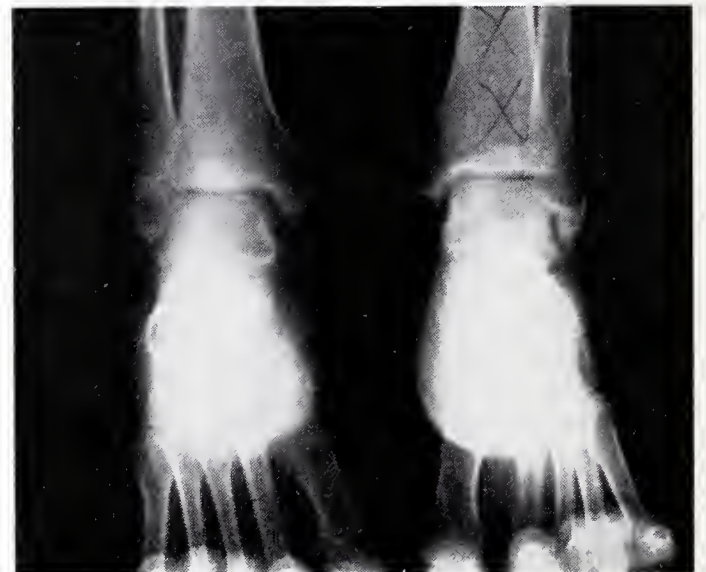


Figure 7.  
Case 3: Left ankle x-ray, November 1979.



# Pediatric Review:

## Salmonellosis in Infants in Arkansas

Gene L. France, M.D.\* and Russell W. Steele, M.D.\*

Salmonellosis is a significant public health problem in Arkansas as well as throughout the United States. In 1977, 27,462 isolates of salmonella were reported to the Center for Disease Control. This was an increase of 4,177 isolations (17.9%) over those reported in 1976 and the most cases reported in the 16 years of the Salmonella Surveillance Activity. Arkansas is in the highest category of salmonella isolation rate with  $> 14.9$  cases reported per hundred thousand population.<sup>1</sup> Salmonellosis is a problem seen by primary care physicians, family practitioners and pediatricians. The highest attack rates are seen in infants and young children.

Even though the clinical symptomatology of salmonella gastroenteritis has been well defined, the usefulness of antibiotic therapy in infants has not been reviewed. In an attempt to provide information for the incidence of salmonellosis in infants in Arkansas, we are reporting the results of a retrospective clinical and bacteriologic study of 253 infants (less than one year of age) with salmonella gastroenteritis and sepsis. Recommendations on the use of antibiotics in infants based on this data will also be included.

### Materials and Methods:

Bacteriologic results were provided by the Epidemiology Division of the Arkansas State Health Department, Microbiology Laboratory of the Arkansas Children's Hospital (ACH), and review of the medical records from ACH and the University of Arkansas for Medical Sciences (UAMS) hospital. Salmonella was isolated on MacConkey medium. Sensitivities were performed by the Kirby-Bauer method by the Microbiology Laboratory of ACH. Infants with salmonellosis were reported to the Arkansas State Health Department. Specimens were sent to the Arkansas State Health Department or positive cultures were reported to the Health Department. The Health Department provides the toll-free code-a-phone (1-800-482-8888) for reporting of salmonellosis and other reportable diseases.

\*Division of Allergy/Immunology, Department of Pediatrics, University of Arkansas for Medical Sciences, Little Rock, Arkansas.

Mailing Address: Gene L. France, M.D., Department of Pediatrics, University of Arkansas for Medical Sciences, 4301 West Markham, Little Rock, Arkansas 72201.

### Results:

During the period from January, 1977 through December, 1978, there were 253 infants with bacteriologically confirmed salmonellosis. Of these, 73 infants were reported by ACH and UAMS. Sensitivities were obtained on 116 specimens of salmonella during this two-year period by the Bacteriologic Laboratory at ACH. Typing was performed on the salmonella by the BBL Salmonella Grouping and Typing Antisera.

In 1977 and 1978, nearly 40% of the salmonellosis reported in Arkansas were in infants less than one year of age. In 1977, the percentage of all salmonella isolates in the United States from infants less than one year of age was 21.4%. The age specific occurrence of salmonellosis can be seen in Figure #1. Infants three months or less in age constituted 48% of the salmonella cases reported and infants 6 months or less in age made up 76% of the salmonella cases reported in infants in Arkansas. The peak age specific attack rate in infants for 1977-78 in Arkansas was three times that of the peak national attack rate (Figure 1).

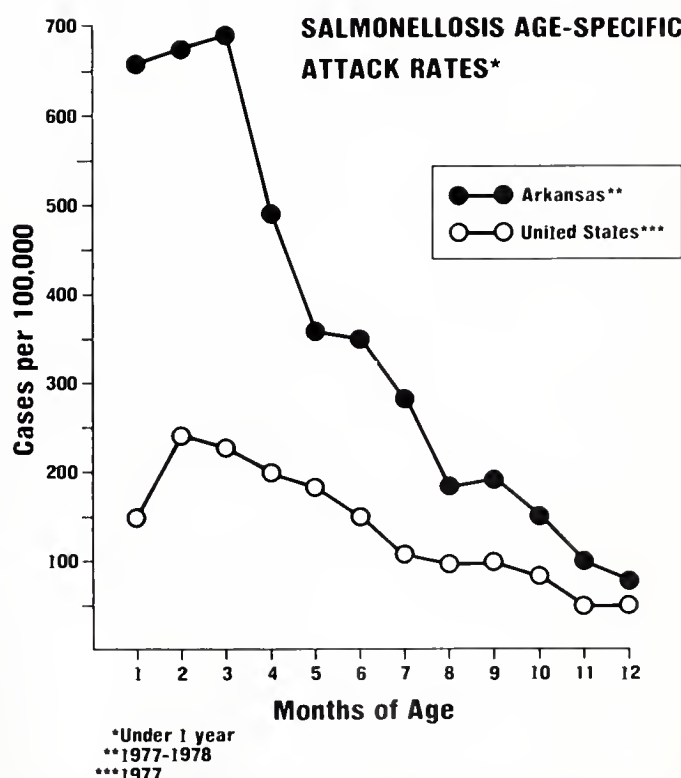


Figure 1 demonstrates the salmonellosis age-specific attack rates in infants less than one year of age by months of age for Arkansas in 1977 and 1978 and for the United States in 1977.



In our study, four cases of salmonella sepsis or meningitis were reviewed — all four cases were from either ACH or UAMS. The ages of these four patients were 2, 4, 5, and 8 weeks. The 5-week-old infant died from overwhelming sepsis. This infant came to UAMS hospital in septic shock. She did not respond to the resuscitation and expired in the emergency room. Postmortem blood cultures were positive for *S. enteritidis*. The cerebral spinal fluid culture was negative for growth. This infant did not have a preceding diarrheal illness. The other three infants were successfully treated with intravenous chloramphenicol succinate for 14-21 days after two infants had failed on intravenous ampicillin sodium therapy.

The major serotypes of salmonella identified in Arkansas infants in 1977-78 can be seen in Table #1. The overall isolation rate of *S. newport* in 1977 was 8% in the United States and 28% in Arkansas (all ages), the overall isolation rate of *S. newport* in the United States was ranked second to *S. typhimurium*. The isolation rate of *S. typhimurium* in 1977 was 34% in the United States and 22% in Arkansas (all ages). The reporting of salmonella isolations in 1977 increased by 54% nationally. In 1977, *S. newport* showed the greatest increase nationwide with a 62.7% increase in the number of isolations reported.<sup>1</sup> *S. newport* showed an 88% increase and *S. typhimurium* showed a 66% increase in 1977 in Arkansas. Sensitivities were done on 25 specimens in 1977 and on 91 specimens in 1978 of salmonella. Results are shown in Table #1. All of the serotypes isolated from blood or CSF at ACH were sensitive to ampicillin (three cases).

#### Discussion:

In 1977-78, salmonellosis in infants less than one year of age represented nearly 40% of the total salmonellosis reported in Arkansas and nearly 30% of the total salmonellosis reported was in infants 6 months old or less. The inci-

dence of salmonellosis in Arkansas in infants less than one year of age is significantly higher than the incidence reported nationally. The peak age specific rate is three times greater. Arkansas, in 1977 (1978 results not presently available) was one of the states in the category of highest incidence of salmonella per 100,000 population; Arkansas had greater than 14.9 cases of salmonella per 100,000.<sup>1</sup>

This statistic may reflect the improved reporting of cases in Arkansas.<sup>1</sup> Also, the culturing of older children and adults with a diarrheal illness is not done as frequently as culturing of infants with this type illness.<sup>1</sup>

Many factors determine which cases of salmonella infections will be reported. Some of these factors are the severity of the infection, accessibility of the patient to a physician, the physician's interest in obtaining cultures, and the local availability and compatibility of the laboratory. The differences in geographic incidence and age of patients reported probably reflect the forementioned factors. The Center for Disease Control estimate from their experience in investigating outbreaks that only 1% of all cases of salmonella infection are reported.<sup>2</sup>

We feel that a significant immunologic-environmental factor is related to the increased incidence in infants, especially those less than 6 months of age. That factor is the lack of breast feeding. In a previous study involving the same 253 infants with salmonellosis, it was noted that none of the 253 infants were being breast fed at the time of the clinical infection. Twelve infants had previously been breast fed some time during the first year of life, but breast feeding was discontinued an average of four months prior to documentation of salmonella gastroenteritis. The shortest interval was one week from discontinuation of breast feeding to the onset of gastroenteritis. This data was statistically significant with a  $p < .001$ .<sup>3</sup>

In the two-year period studied, there were four cases of sepsis and all of these infants were 8 weeks of age or less. The incidence of sepsis in our study in infants with salmonellosis  $\leq$  three months of age was at least 3.3% and infants  $\leq$  two months the incidence was 5%. If we calculated the percentages using only the 73 patients reported from Arkansas Children's Hospital and the University of Arkansas for Medical Sciences

**TABLE 1**  
**Salmonella Isolates in Infants**  
**Less than One Year of Age**

Serotypes	Number	%
Infantis	14	5.5
Javiana	14	5.5
Newport	60	24
Typhimurium	31	12
Others	85	34
Non-typed	49	19

hospital where the patients with sepsis were reported, the incidence of sepsis would have been 7% for  $\leq 6$  months, 11% for  $\leq$  three months, and 16% for  $\leq$  two months. If blood or cerebral spinal fluid cultures were positive in any other infants in the state, it was not reported, reported as only enteric salmonellosis, or forwarded to the investigators inaccurately.

Kazemi, et al<sup>4</sup> reported on 117 children with nontyphoidal salmonellosis from Montreal Children's Hospital. Eleven (24%) of the 45 patients who had blood cultures done were bacteremic. In the 0-3 month age group, one (7%) of 14 had a positive blood culture, and in the 3-12 month age group, two (25%) of 8 had a positive blood culture. Transient bacteremia is probably more common in this disease than is reported.<sup>4</sup> Cherubin<sup>5</sup> reported on the occurrence of septicemia with salmonella during a ten-year period in New York City and out of 412 cases of sepsis, 104 cases were in infants  $<$  one year. From these 104 cases of sepsis, only four who were less than 6 months and who had no underlying disease, died. Infants during this ten-year period were not routinely placed on antibiotic therapy for salmonellosis.

Kazemi<sup>4</sup> found that the clinical appearance and course of the bacteremic and non-bacteremic patients were not markedly different. However, the bacteremic children had fever (100%), vomiting (75.4%) and blood in the stools (70.8%) more often than the nonbacteremic children. As a group, the bacteremic children were ill longer. Ampicillin was the antibiotic most often used and usually administered in a dosage of 100 to 500 mg/kg/day intravenously or intramuscularly. Kazemi<sup>4</sup> reported that therapy was usually associated with a longer illness, hospitalization and carrier state. These trends, however, were not

statistically significant. Also, therapy was not assigned in a random fashion and the patients who received antibiotics were more severely ill. No significant complications were reported in the treated group. During the study period, infants  $<$  three months of age were treated with antibiotics. There was not a mortality during the study period. The parenterally treated infants seemed to have a more prolonged illness than the infants who were either untreated or treated with oral antibiotic. Again, no significant complication and no mortality were in either group. Infants  $\leq$  three months of age have a longer and higher carrier rate than older children, if the infants are treated with antibiotics or not.

Due to the increased risk of complications,<sup>6</sup> such as sepsis (3-11%) and prolonged illness in young infants with salmonella infection we recommend the treatment of symptomatic infants (three months or less) with ampicillin 50-100 mg/kg/day for 10 days orally or trimethoprim-sulfamethoxazole 8 mg/kg/day-40 mg/kg/day for 10 days orally as an alternate antibiotic in infants with severe gastroenteritis. Infants with salmonella sepsis should receive chloramphenicol 100 mg/kg/day intravenously for 10-14 days. More information is needed. A prospective controlled study of salmonella gastroenteritis in many infants is needed before we would recommend to the clinician that antibiotics not be used in the toxic infants ( $\leq$  three months of age) with this illness. Blood cultures and lumbar punctures are justified in infants with salmonellosis.

Salmonellosis in infants and children is a significant public health problem<sup>7</sup> and the incidence of disease is on the rise.<sup>1</sup> The majority of infections are sporadic and foodborne outbreaks are rare.<sup>8</sup> Preventive medicine could play a ma-

**TABLE 2**  
**SALMONELLA ANTIBIOTIC SENSITIVITY SUMMARY**  
(Percentages)

	# of strains	Amikacin	Ampicillin	Carbenicillin	Cephalothin	Chloramphenicol	Colistin	Furadantin	Gentamicin	Kanamycin	Tetracycline	Tobramycin	Trimeth/Sulfa
1977	25	—	84	84	100	100	100	100	100	80	88	100	—
1978	91	100	88	88	96	99	100	96	100	100	91	100	100



major role in decreasing the incidence of salmonellosis in infants. Data suggest that breast feeding would lower the incidence of this disease in infants significantly.

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## EDITORIAL

# Non-A, Non-B Hepatitis

Alfred Kahn, Jr., M.D.

In World War II, acute viral hepatitis appeared as an epidemic disease, much to the surprise of many physicians. Records show that it was prevalent in the Civil War armies and in many other periods when there was a vast gathering with poor sanitation. Post World War II physicians were well acquainted with two types of hepatitis: Infectious hepatitis now known as Type A and Serum hepatitis now known as Type B. Centers studying hepatitis in the more recent past have identified another type of acute viral hepatitis; so called Non-A, Non-B Hepatitis. This type of hepatitis neither fit the laboratory features of either Type A nor Type B hepatitis. Ninety percent of transfusion hepatitis is believed to be Non-A, Non-B hepatitis. Non-A, Non-B hepatitis causes twenty percent of the sporadic cases of hepatitis and thirty-five percent of the fulminant type of hepatitis. The laboratory diagnosis of Non-A, Non-B hepatitis has

been one of exclusion — and it seems to be seen principally after transfusion rather than after travel, shellfish, contact, etc. The real problem in Non-A, Non-B hepatitis is the absence of a biological marker for positive identification despite the clinical evidence of a viral agent reported by several laboratories. This problem has been discussed by Dienstag, Bhan, Alter, Feinstone, and Purcell (*Lancet*, Vol. 1 for 1979, p. 1265, June 16, 1979). They relate the difficulty in clinical cases of identifying a virus using such modern means as agar gel immunodiffusion, immune electromicroscopy, immunofluorescence microscopy, and radio-immune assay. The authors feel that the virus of Non-A, Non-B hepatitis might in some way be masked. They found circulating immune complexes in Non-A, Non-B hepatitis cases convalescing from the disease. Dienstag et al postulate that these immune complexes may actually contain the antigens of the

Non-A, Non-B virus and because of this in some way conventional immunologic means fails to detect the virus or its antigen. The problem now is how to identify a biological marker in the immune complex.

Tabor, April, Seelf, and Gerety (Gastro-enterology, Vol. 76, p. 680, April 1979) have also worked on the problem of Non-A, Non-B hepatitis in the blood. It has been previously demonstrated that Non-A, Non-B hepatitis can be transmitted to chimpanzees. Working in the Hepatitis Branch of the Division of Blood and Blood Products, the Veteran's Administration Hospital of Washington, DC, and Georgetown University School of Medicine, Tabor et al again used chimpanzees for their experimental studies. The chimpanzees were inoculated with sera from chimpanzees known to have Non-A, Non-B hepatitis. Five of six inoculated chimpanzees later became ill with hepatitis; they were monitored by various laboratory tests including aspartate aminotransferase (AST), alanine aminotransferase (ALT), isocetric dehydrogenase (ICD), fractions of hepatitis B antigen, hepatitis antibodies, Ebstein Barr virus, cytomegalo virus, etc. In the chimpanzee, the authors found that the viral agent may be present for a long period of time — varying in different animals 4 weeks, 5 weeks, 13 weeks, etc. The probability of prolonged infectivity of the blood of human cases of Non-A, Non-B virus is frightening in terms of trying to prevent post transfusion hepatitis. The problem is made even worse by the reported fact that some humans who are infected with Non-A, Non-B hepatitis

virus may not have overt hepatitis yet carry the disease and are capable of transmitting it to other individuals.

Seeff and Hoofnagle (Gastro-enterology Vol. 77, p. 161, July 1979) have reviewed the very important topic of the "Immunoprophylaxies of Viral Hepatitis". Of particular relevance is the discussion of the section dealing with post transfusion and Non-A, Non-B hepatitis. They reported that gamma globulin might reduce the icteric type of Non-A, Non-B hepatitis by 50-80 percent. The simple expedient of using volunteer blood instead of paid commercial donors also dramatically reduces the influence of Non-A, Non-B hepatitis, and for this reason patients receiving blood from volunteers do not need to be protected with gamma globulin as a routine. The data leading to this conclusion is somewhat confusing because of the absence of a true specific test for Non-A, Non-B hepatitis. Seeff and Hoofnagle recommend generally that immunoprophylaxis should be recommended in certain situations involving Non-A, Non-B hepatitis; they include sexual contacts with acute disease, needle stick exposure and the new born of mothers ill with Non-A, Non-B hepatitis. Of incidental importance is the fact that the half life of gamma globulin in adults is 13 days and in children 20 days. This gives some clue as to whether second injections might be necessary for re-exposure, etc.

Non-A, Non-B hepatitis researchers need to develop three things: an easy way to identify the disease, a good treatment for the disease, and a new name for the disease.



## PROCEEDINGS OF SOCIETIES

### Crittenden County Elects Officers

The Crittenden County Medical Society re-elected the following officers at their November meeting: Dr. W. J. Wright of Earle, President; Dr. Sidney W. Arnold of West Memphis, Secretary; and Dr. Keith B. Kennedy of West Memphis, Treasurer.

### ANSWER—Electrocardiogram of the Month

DISCUSSION: The ECG shows a sinus bradycardia with first degree block, left axis deviation, increased voltage, ST-T changes consistent with left ventricular strain, abnormal P terminal force in  $V_1$  and prolongation of the QRS duration to 0.09 sec. In the Ramhill-Estes scoring system, this trace has twelve of thirteen possible points with only five points being needed in the Estes system to indicate definite left ventricular hypertrophy. Most patients with acute forms of aortic regurgitation will not meet the Ramhill-Estes criteria for left ventricular hypertrophy. It has been shown that patients with chronic AR and with six or more Estes points have a significant decrease in their five year survival. The clinical facts presented are most consistent with chronic, not acute, aortic regurgitation. Thus, #1 and #3 are false while #2 is true.



## MEDICINE IN THE



### THIS MONTH IN WASHINGTON

The Carter White House by the month's end had still not risked its hospital cost containment measure to the vagaries of a yea or nay vote on the full House floor. For the President the victory or defeat of the bill could determine whether he will be able to capture the democratic presidential nomination over Sen. Edward Kennedy (D.-MA).

The pressures on both sides are immense. Not in years has the House been so buffeted by a health issue. The almost daily "counting of noses" indicates that the margin between victory and defeat could be as narrow as a single vote.

And all stops have been pulled. After a White House pep talk by Rosalyn Carter, senior citizen and labor groups swarmed the halls of the House. Sen. Kennedy told them that the Congress must enact controls on hospital spending lest the elderly be faced with deciding between "heating their homes or paying their hospital bills."

Opponents of the containment measure argue that a yea vote would mean the installation of rigid and penurious federal expenditure controls that might well affect the quality of American health care for generations to come.

Alfred Kahn, the President's chief inflation fighter, told the House members that they will be casting a vote "for or against inflation." Kahn, who has firmly opposed controls for any segment of the economy, said in his letter "this is not like any other industry, the reasonableness of whose charges and services can safely be left to the competitive marketplace; the effective checks present elsewhere in the free enterprise system are simply not present here."

And the anti-control forces also have been hard at work. The Chamber of Commerce of the United States urged the House to defeat the bill. Congress should encourage voluntary efforts, which have proved successful, "instead of undermining them by imposing price controls on our essentially private health care system," said the Chamber.

The Chamber letter stated that in addition to being fundamentally flawed, the bill "suffers from several inconsistencies." These were listed:

- "it exempts federal hospitals from controls; yet, these public facilities are showing cost increases greater than those of private institutions.
- "it exempts from controls the salaries of non-supervisory personnel; however, such wages account for as much as two-thirds of a hospital's budget.
- "it ignores the fact that regulation itself contributes significantly to rising costs. For example, hospitals in New York state spend over one billion dollars annually complying with government regulations, adding \$40 to every patient's bill."

Congressional opponents of the bill have mustered a counter assault. In a "Dear Democratic Colleague" letter Reps. James Jones (D.-OK) and Richard Gephardt (D.-MO) said the bill "is so riddled with exceptions and exemptions that the estimated savings from the bill during the first year alone are now down to one-fourth the original estimates."

The two lawmakers noted that the bureaucracy will have to gear up to monitor these exceptions, exemptions, formulas and percentages. The new powers given to the HEW Secretary by the bill "highlight both the complexity of administering this bill and the vast secretarial discretion which it authorizes," they said.

"While the American people want hospital costs curtailed, they also want less bureaucracy. The bill would undoubtedly increase the size of the federal bureaucracy and strengthen the hold that the government now has on the health care sector. To reverse these trends and encourage the continuation of the Voluntary Effort and the exploration of private-sector alternatives, we urge you to vote No," said the Congressmen's letter.

Rep. Gephardt is author of a substitute measure that establishes a National Commission on

Hospital Costs and provides aid to state cost containment programs. The key House vote on the entire issue is expected to swing on the Gephardt substitute, which came within a whisker of approval by the House Commerce Committee.

Gephardt and Jones said the health care industry through its National Voluntary Effort is the only major segment of the economy that has decreased its rate of inflation. Yet the Administration has responded to this voluntary program by seeking to enact legislation that gives the Secretary of HEW unprecedented control over local hospitals including public and private reimbursement.

The Administration's bill completely bypasses the community-based health planning law and authorizes HEW to determine what services hospitals may provide, they said. Virtually all hospitals not subject to state mandatory controls will be under federal mandatory hospital cost controls if Congress passes this bill, they warned.

Administration of the bill "will require a new additional massive layer of bureaucracy, promulgation of numerous new regulations applied to an already highly regulated industry with resultant administrative costs to both the government and hospitals."

Most Capitol Hill observers agree that the Senate will not touch the hot potato measure until and unless the House approves it.

\* \* \* \*

The Federal Trade Commission has ruled that the American Medical Association's Principles of Medical Ethics unlawfully restrict competitive advertising by physicians, but said the AMA should continue to act to curb false or deceptive advertising.

The AMA responded that it will ask the Court of Appeals to reverse the order to the extent that "the order continues to prevent medical societies from taking action against deceptive or other unethical practices that may harm or mislead patients."

Commending the Commission's recognition of the AMA's "valuable and unique" role with respect to preventing false and misleading advertising, the Association at the same time challenged the FTC's allegation that it had re-

strained competition by restricting advertising among its members.

"We are pleased that the Commission has endorsed the position the Association has taken throughout the case, that the profession and the public are well served with quality care if medical societies are involved in seeing that information that is advertised is truthful and nondeceptive," said Newton N. Minow, the attorney representing the AMA. "However, the AMA must continue to take issue with the Commission's decision that the ethical principles of the Association have prevented physicians and medical organizations from disseminating information on the prices and services they offer. The AMA Principles of Medical Ethics do not proscribe advertising, but they do prohibit false and misleading advertising that may adversely affect quality care to patients," said Minow.

The Commission's decision is based on the FTC's complaint issued in December, 1975. That complaint charged the AMA with violating Section 5 of the FTC Act by restricting the ability of their members to advertise for and solicit patients and to enter into various contractual arrangements in connection with the offering of their services to the public.

\* \* \* \*

The Administration's mental health bill does not do justice to the seriously mentally ill population, the AMA has told Congress.

Scarce dollars and manpower should be directed toward the treatment of persons with demonstrable mental illness and not be diverted to ministering to people who have only social maladjustment problems, the AMA said in a letter to the Senate Human Resources Subcommittee on Health.

The bill before the Subcommittee — "The Mental Health Systems Act of 1979" — would largely replace the Community Mental Health Centers Act as the major federal program funding mental health services in this country. Many of its provisions are based on recommendations of the President's Commission on Mental Health chaired by Mrs. Rosalyn Carter.

The AMA commended the Commission's work, but said the legislation was not an ap-



propriate response to the Commission's recommendations.

A Community Mental Health Center should not offer "non-medical" and "non-health" services to "clients" at the expense of therapeutic psychiatric and medical care to its patients, the AMA said. "Any new federal legislation should require these centers to address professionally diagnosed psychiatric illness as their major responsibility."

The AMA recommended the following minimum standards for community centers:

- Centers should be oriented to a broad medical model that encompasses a range of physical, psychiatric and social concerns with appropriate priorities.
- Centers should be integrally involved with community and teaching hospitals, and linked with other community health services, including state mental hospitals, to assure effective referral and followup, especially with regard to the de-institutionalized chronically ill.
- The clinical director of each center should be a physician, preferably a psychiatrist.
- A physician should have overall responsibility for directing and supervising the evaluation and diagnosis, as well as total treatment planning, for each patient.
- Community mental health centers should be required to meet standards of performance and quality of care.
- Primary care and psychiatric residency training programs should be encouraged to affiliate with centers.

\* \* \* \*

The AMA has urged Congress to repeal a law that requires most services of teaching physicians to be included in the definition of inpatient hospital services and reimbursable under Part A of Medicare.

"Reimbursement of teaching physicians should be on a fee-for-service basis under Medicare Part B," the AMA said.

Fairfield Goodale, M.D., Dean of the Medical College of Georgia, told the House Commerce Subcommittee on Health that for seven years

the HEW Department has been unable to develop satisfactory regulations to implement this provision. "This litany of delay, proposals, studies, and further delay, to us, is a clear indication that the action of the 92nd Congress enacting this provision was fundamentally unsound," said Dr. Goodale. "The AMA believes that the time for delay and study of this law is past. Section 227 should be repealed now."

The AMA spokesman said the financial relationship between hospitals and their teaching programs and faculty are as varied as are the programs themselves. "These relationships do have one thing in common, though. They are all a result of, and a response to, the unique characteristics and needs of individual patients, individual hospitals, individual training programs and individual teaching physicians. This mix is not the same from one institution to another, and indeed from one department to another within the institution. Because each set of relationships responds to a particular set of local circumstances and problems, no single national solution will ever be satisfactory."

"The law must take cognizance of individual needs and circumstances. Anything less will only be unfair and unmanageable. Section 227 cannot accommodate these justifiable differences and should be abandoned."

Dr. Goodale said implementation of the challenged provision "would almost certainly reduce the patient revenues that legitimately and properly can be used, at least in part, to support medical education, without a significant improvement in program administration. The economic stresses on medical education are already severe. To aggravate this condition by further reducing the funds, from whatever source, that could be used to support medical training can only lead ultimately to a reduction in the quality of care for patients."

\* \* \* \*

Congress has sent to the White House a three-year extension of the health planning law shorn of most of the controversial provisions that had worried health providers.

Of large relief to physicians is that the bill's extended certificate-of-need approval for physicians' offices applies only if expensive (\$150,000 or more) new equipment is to be used for hos-

pital inpatients. There had been a move in the Senate last year to include all major equipment in physicians' offices.

The \$987 million bill was blocked in the last Congress when House and Senate failed to reach agreement. The measure has been caught in controversy since its inception in 1974 with charges that "health planners" have been arbitrary in disallowing facilities and services and have overreached their mandate by dictating the manner of medical practice. The argument for the bill has been that brakes are needed to prevent duplicate facilities and hospital equipment.

The bill eliminates a requirement in present law that state and local planning decisions must conform to national guidelines by the HEW Department, a significant boost for local authority.

Health Maintenance Organizations (HMOs) generally were exempted from the planning law's strictures as part of Congress' desire to promote them.

Congress did go along with the Administration's request for funds — \$155 million — to assist hospitals in closing down underused acute beds.

\* \* \* \*

AMA officials have met with Patricia Harris, HEW Secretary, to discuss important medical questions of mutual interest.

A major item on the agenda was the Medical Manpower bill the Administration is preparing to submit to replace the program scheduled to expire next year.

Mrs. Harris was accompanied by top aides, including Assistant Secretary for Health, Julius Richmond, M.D., whose role at HEW will be magnified under the new leadership of Mrs. Harris.

The AMA delegation included Lowell Steen, M.D., Chairman of the Board of Trustees; Joseph Boyle, M.D., AMA Trustee; Robert Hunter, M.D., AMA President-Elect; and James Sammons, M.D., AMA Executive Vice President.

Mrs. Harris indicated discussions with the AMA and HEW will continue and increase if necessary. She told the physicians that there are obvious areas of disagreement "but we will seek areas of agreement."

Dr. Richmond will be the chief HEW official the AMA should turn to, Mrs. Harris said, explaining that she would consider items that needed to be carried higher.

At the hour and a half session, manpower and cost containment dominated the talks. The AAM's position of opposition to cost containment was outlined. Mrs. Harris said she felt the controversial bill has a good chance of winning Congressional approval, but at the same time she said she was delighted with the success of the voluntary effort at keeping hospital cost rises down.

Members of the two groups agreed that it had been a productive first meeting.

\* \* \* \*

The Group Health Association, Washington, D.C.'s largest Health Maintenance Organization, has conceded that lengthy appointment delays are intentional to keep down costs.

Edward J. Hinman, M.D., Association President, told the *Washington Post* that "to fully respond to the demands of every member would create costs that would be unacceptable to the majority of members."

Routine obstetric and gynecological appointments sometimes take as long as 12 weeks.

Another local HMO, the George Washington University Health Plan, told the newspaper its patients face waits of up to eight weeks for routine visits.

Dr. Hinman said that "from a national perspective the real issue is how are we as a nation to do everything we want for ourselves and still pay for it?"

\* \* \* \*

#### REPORT ON WINTER MEETING OF THE ARKANSAS MEDICAL SOCIETY

The winter meeting of the Arkansas Medical Society was held November 18 at the Camelot Inn, Little Rock. Meetings of various Society committees were held during the morning.

Members of the Society and Auxiliary heard a presentation by Mr. Robert Bruce, Regional Vice President for INTRAV, sponsors of the travel program for the Society.

A business session of the Society Council was held at 10:00 A.M.





Dr. Elvin Shuffield receives appreciation plaque from Society President.



B. J. Anderson addresses membership on activities of the legal department of the American Medical Association.

At a luncheon meeting for members of the Society and Auxiliary, President A. E. Andrews of Texarkana was master of ceremonies. During the luncheon, Dr. Andrews gave special recognition to Dr. Elvin Shuffield for twenty-one years of distinguished service as chairman of the Committee on Medical Legislation. Dr. Shuffield was presented a plaque from the Society.

B. J. Anderson, Assistant General Counsel of the American Medical Association, addressed the membership at the luncheon. She presented "AMA Litigation Update".

\* \* \* \*

#### **COUNCIL MINUTES November 18, 1979**

The Council of the Arkansas Medical Society met at 10:00 A.M. on Sunday, November 18, 1979, in the Camelot Inn, Little Rock. Present were: Burge, Andrews, Kutait, Shuffield, Cornell, Osborne, J. Bell, Hestir, P. Bell, Irwin, Warren,

Duncan, Harris, McCrary, Mann, Jouett, Jones, Henry, Williams, Lilly, Chudy, Phillips, Saltzman, Applegate, Wood, Koenig, Kolb, Wynne, Ellis, Brown, Verser, Townsend, George Mitchell, Bob Benafield, Edgar Easley, Bob Banister, Norman Smith, James Guthrie, James Weber, John Crenshaw, Roger Bost, James Maupin, Raymond Biondo, Mayne Parker, Mrs. Frank Morgan, Mr. Warren, Mr. Cearley, Mr. Mitchell, Mr. LaMas-tus, Mr. Owens, C. C. Long and Miss Richmond.

The Council transacted business as follows:

1. Chairman Burge presented the Arkansas Medical Society Restated Pension Trust Plan for approval of the Council. He advised the Council that the plan had been reworded to comply with some provisions of the Federal Government regulations and the following changes had been made in the provisions of the plan effective October 1, 1978:
  - A. The provision that an employee may retire after 35 years of service has been eliminated for employees hired after October 1, 1978;
  - B. There has been included a provision that annual adjustment for the cost of living be integrated with increases in Social Security benefits;
  - C. The plan has been modified to provide that the annual cost of living adjustment shall be limited to an increase of ten percent over the previous year's benefit.

Upon motion of Lilly, the Council voted to approve the restated plan as presented.

Chairman Burge then presented recommendations from the Board of Trustees which were not a part of the actual plan:

- A. That the Society treasurer automatically be a voting trustee of the pension plan for the term of his office and there be four other voting trustees with staggered terms. Normal terms would be four years.
- B. That a trustee must be off the board for one year before being eligible for reappointment.
- C. That the Executive Vice President of the Society be an ex-officio member of the board of trustees without vote.

Upon motion of Harris, the Council voted to approve those recommendations.

2. Pat Phillips, Chairman of the Committee on National Legislation, presented a recommendation from his committee that the Council authorize an annual Congressional visitation by representatives of the Society. Upon motion of Duncan, the Council voted approval for an annual Congressional visitation by a group of Society representatives selected by the Committee on National Legislation, with the group acting as an ad hoc committee for an additional visitation if indicated by developments.
3. Upon motion of Mann, the Council approved Executive Committee action in accepting an invitation from the Health Department to co-host the National Rural Primary Care Conference to be held in Little Rock in March 1980. Co-hosting had been recommended by the Chairman of the Committee on Rural Health.
4. The Council approved Chairman Burge's reappointment of Asa Crow to a four-year term on the Budget Committee. Upon motion of Jouett, the Council voted to require a one-year interval before reappointment to the Budget Committee in the future.
5. Upon motion of Shuffield, the Council accepted the report of the Ad Hoc Committee on Study of the Principles of Medical Ethics for referral to the American Medical Association.
6. Upon motion of Jones, the Council voted to support the recommendation of the Committee on Continuing Medical Education that there be no implementation at this time of mandatory continuing medical education for membership retention.
7. Upon motion of Irwin, the Council authorized attendance of five officers at the National Leadership Conference of the American Medical Association.
8. Upon motion of Kutait, the Council voted to oppose changes proposed by the Department of Health, Education and Welfare and the Center for Disease Control regarding personnel standards for clinical laboratories and to advise our Congressional delegation of such opposition.

9. Upon motion of Jouett, the Council voted to reconsider the approval of the Pension Plan for Society employees. A standing vote was then taken on the original motion for approval of the restated plan as presented. With fourteen members voting for approval, the restated plan was approved by the Council.

10. Amail Chudy presented a request from the Med-Dames for financial support of a presentation at the Medical Center by Dr. Gordon Decker. Upon motion of Warren, the Council voted to contribute \$250.

11. Executive Vice President C. C. Long proposed that the title for Ken LaMastus be changed to Assistant Executive Vice President. Upon motion of Hestir, the Council so voted.

The Council adjourned at 11:55 A.M.

APPROVED: John P. Burge, M.D.

Chairman of the Council

\* \* \* \*

#### MINUTES

#### HOUSE OF DELEGATES ARKANSAS MEDICAL SOCIETY

November 18, 1979

The House of Delegates of the Arkansas Medical Society met at 2:00 P.M. on Sunday, November 18, 1979, in the Camelot Inn, Little Rock. Speaker of the House Amail Chudy presided. Invocation was by W. Payton Kolb.

The following were seated as voting members of the House:

ARKANSAS: Gerald Guyer; BAXTER, John F. Guenthner; BENTON, Richard Pearson, Jim Arkins; CRAIGHEAD-POINSETT, Frank James, John Kirkley; CRITTENDEN, Milton Deneke; FAULKNER, Robert Benafield; GARLAND, Ronald Bracken, E. K. Clardy; GREENE-CLAY, Richard Martin, Larry Lawson; HEMPSTEAD, James W. Branch; INDEPENDENCE, Jim Lytle; JEFFERSON, H. L. Green; JOHNSON, Don Pennington; MILLER, F. E. Joyce; MISSISSIPPI, E. A. Shaneyfelt; PHILLIPS, Robert D. Miller; POPE, James Kolb; PULASKI, Edgar Easley, James R. Weber, Kelsy Caplinger, Robert D. Dickins, Charles W. Logan, William G. Reese, J. Mayne Parker, Harold Purdy, Fred Kittler, John McCollough Smith, Raymond Biondo, Douglas Smith, William Mason, Glen Baker, Henry Thomas, Ruth Steinkamp, David Barclay, Warren Douglas, Guy Farris, Edwin Hankins,



Harold Hutson and Gary Wood; SALINE, John Frandolig; SEBASTIAN, A. C. Bradford, Carl Williams, Sam Koenig, Morton Wilson; UNION, Allan Pirniqué; VAN BUREN, John A. Hall; WASHINGTON, Martha Hutson, Glen Fincher; YELL, James L. Maupin; COUNCILORS, M. J. Osborne, John E. Bell, John Hestir, L. J. P. Bell, Raymond Irwin, John P. Burge, George Warren, Donald Duncan, Lynn Harris, Jerry Mann, Robert McCrary, Ray Jouett, William Jones, Morriss Henry, Rhys Williams, and Ken Lilly; PRESIDENT A. E. Andrews; PRESIDENT-ELECT Kemal Kutait; FIRST VICE PRESIDENT Paul Cornell; SPEAKER Amail Chudy; VICE SPEAKER W. P. Phillips; SECRETARY, Elvin Shuffield; PAST PRESIDENTS, Joe Verser, Stanley Applegate, John Wood, T. E. Townsend, A. S. Koenig, Jr., George F. Wynne, Ben N. Saltzman, and W. Payton Kolb.

The House transacted business as follows:

1. Speaker Chudy presented the following proposal from the Reorganizational Study Committee, referred by the Council without recommendation:

"The number of councilors be based on two councilors for each of the present districts with 200 or less members. For each additional 100 members, the district will be entitled to one additional councilor."

Speaker Chudy advised the members of the House that approval of the proposal would require referral to the Constitutional Revisions Committee for drafting of an amendment to implement the proposal change.

Saltzman moved that the proposal be accepted for referral to the Constitutional Revisions for drafting of a Constitutional amendment to be considered by the House of Delegates at the 1980 Annual Session.

Speaker Chudy ruled that the amendment proposed by the Constitutional Revisions Committee would go to the House of Delegates for vote without referral to a reference committee. The House voted to overrule the Speaker and direct that the committee report be referred to a reference committee.

The House then voted to accept the concept of the proposal for referral to the Constitutional Revisions Committee for drafting of a proposed amendment, which would be presented to the

House at the 1980 Annual Session and referred to a reference committee. The vote was sixty-five to thirteen.

2. Upon motion of Lynn Harris, the House voted to submit the following nominations to the Governor for the fourth congressional district vacancy on the State Board of Health:

Judson N. Hout, Camden  
Robert M. Bransford, Texarkana  
James E. Seale, Jr., El Dorado

The meeting adjourned at 3:00 P.M.  
APPROVED: Amail Chudy, M.D.  
Speaker of the House



## THINGS TO COME

### APRIL 1980

The 1980 American Heart Association *Tri-State Scientific Sessions* for Physicians will be held April 17-18, 1980, at the Biloxi Hilton, Biloxi, Mississippi. The theme for this session is "Cardiology 1980—Advances in Diagnosis and Treatment".

For further information and registration forms contact: The American Heart Association, Mississippi Affiliate, 4830 East McWillie Circle, Post Office Box 16063, Jackson, Mississippi 39206 or phone (601) 981-4721.

The Annual Session of the *Arkansas Medical Society* will be held April 20-23, 1980, at the Arlington Hotel in Hot Springs. The Program theme will be "Recent Advances in Oncology".

The *Department of Orthopedic Surgery* at the University of Arkansas for Medical Sciences will hold its AAOS Sponsored Psychomotor Skills Seminar April 17-19, 1980, and the AAOS Sponsored Educators Course will be held April 24-26, 1980.

### MAY 1980

The *Department of Orthopedic Surgery* at the University of Arkansas for Medical Sciences, will sponsor a Ender Nail Psychomotor Skills Seminar during May 22-23, 1980.

# keeping up

## Category 1 Continuing Medical Education Programs Available in Arkansas

### **PRACTICAL PEDIATRIC RADIOLOGY FOR THE GENERAL RADIOLOGIST**

Presented by Joanna Seibert, M.D., Associate Professor, Department of Radiology, University of Arkansas College of Medicine, 8:00 A.M. to 5:00 P.M., February 9-10, Hilton Inn, Little Rock. Sponsored by the University of Arkansas for Medical Sciences. Ten hours Category I credit. Registration fee \$110.00 for physicians; \$35.00 for residents.

### **ACUTE RESPIRATORY FAILURE**

Presented by Fredrick C. Hiller, M.D., Assistant Professor, Department of Medicine, University of

Arkansas College of Medicine, 7:30 A.M. to 5:00 P.M., March 17-19, Education II, Room G-137, UAMS Campus. Hours of accreditation have not been determined. Registration fee \$100.

### **HYPERTENSION AND KIDNEY DISEASE**

Presented by Watson Arnold, M.D., Assistant Professor, Department of Pediatric Nephrology, University of Arkansas College of Medicine, 8:00 A.M. to 5:00 P.M., March 21-22, Education II Amphitheater, UAMS Campus. Hours of accreditation have not been determined. Registration fee \$50.

### **RECURRING EDUCATION PROGRAMS**

Unless otherwise indicated, programs are for one to one and one-half hours Category I credit.

#### **EL DORADO**

*Pathology Conference*, second Tuesday each month, 12:00 Noon, Associated Pathologists' Laboratory. Sponsored by AHEC-El Dorado.

*Chest Conference*, alternate Wednesdays, 12:00 Noon, Warner-Brown Hospital. Sponsored by AHEC-El Dorado.

#### **FAYETTEVILLE — VA MEDICAL CENTER**

*Radiology Conference*, February 5 and March 4th and 19th, 3:00 P.M., Conference Room.

*Pathology Conference*, February 19, 3:00 P.M. and March 11, 1:30 P.M., Conference Room.

*Mortality Conference*, February 14 and March 10, 3:00 P.M., Conference Room.

*Hematology Conference*, February (check for date and time).

*Pulmonary Conference*, March (check for date and time).

#### **HOT SPRINGS — ST. JOSEPH'S MERCY MEDICAL CENTER**

*Arkansas Health Department Regional Chest Conference*, second and fourth Tuesday.

#### **LITTLE ROCK — BAPTIST MEDICAL CENTER**

*Pulmonary Care Conference*, each Tuesday, 12:00 Noon to 1:00 P.M., Dining Room #4.

*Central Arkansas Primary Care Conference*, second Tuesday, 7:00 P.M. to 9:00 P.M., Auditorium. Two hours Category I credit.

*Cardiopulmonary Resuscitation Course*, second Wednesday, 6:00 P.M. to 12:00 P.M., Human Resource Development Area. Six hours Category I credit.

*Morbidity and Mortality Conference*, first Thursday, 8:00 A.M. to 9:00 A.M., Conference Room #1.

*Surgery Conference*, each Thursday except first Thursday, 8:00 A.M. to 9:00 A.M., Conference Room #1.

#### **LITTLE ROCK — ST. VINCENT INFIRMARY**

*Interhospital GI Problems Conference*, first Monday, 6:00 P.M. to 7:30 P.M., Room E155, Education Wing.

*Peripheral Vascular Disease Conference*, second Monday, 6:00 P.M. to 7:00 P.M., Room E155 Education Wing.

*Interhospital Urology Grand Rounds*, first Tuesday, 5:30 P.M. to 6:30 P.M., Room E159, Education Wing.

*Neuropathology Conference*, third Tuesday, 5:00 P.M. to 6:00 P.M., Room S1169, Laboratory.

*Pulmonary Conference*, first and third Thursday, 12:00 Noon to 1:00 P.M., Room E159, Education Wing.

*Cleft Palate Conference*, February 20, 12:30 P.M., Room E159 Education Wing.

#### **LITTLE ROCK — UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES**

*Internal Medicine Grand Rounds*, each Thursday, 8:00 A.M. to 9:00 A.M., Education I Auditorium.

#### **TEXARKANA — ST. MICHAEL HOSPITAL**

*Tumor Conference*, first Wednesday, 7:00 A.M. Sponsored by AHEC-SW.

*Chest Conference*, third Wednesday, 12:30 P.M. Sponsored by AHEC-SW.

As organizations accredited for continuing medical education by the Liaison Committee on Continuing Medical Education, the organizations named certify that these continuing medical education activities meet the criteria for the credit hours specified in Category I of the Physician's Recognition Award of the American Medical Association.





## PERSONAL AND NEWS ITEMS

### **Physician Locates**

Dr. Dennis R. Burrow has begun family practice at 550 Edgewood, Suite 118, in Maumelle.

### **Physicians Named Fellows to the AAFP**

Dr. James A. Capps, Jr., of Springdale, Dr. John D. Smith of Conway, and Dr. D. L. Toon of Crossett have been named Fellows of the American Academy of Family Physicians.

### **Dr. Miller Named to Organization**

Dr. Charles H. Miller of Fayetteville has been elected a Fellow of the American College of Surgeons.

### **Dr. Patrick Speaks**

Dr. James Patrick of the Arkansas Health Education Center in Fayetteville was guest speaker at the November meeting of the Washington County Health Advisory Council. Dr. Patrick's speech outlined the transition from general practice to family practice.

### **Dr. Saltzman Named Recipient**

Dr. Ben N. Saltzman of Little Rock has been named recipient of the 1980 Brotherhood Citation Award of the Arkansas Council on Brotherhood of the National Conference of Christians and Jews. Dr. Saltzman is the director of rural medical programs for the University of Arkansas Medical Sciences Campus.

### **Dr. Warren Honored**

Dr. George W. Warren of Smackover has been honored with a reception at the First United Methodist Church in Smackover. Dr. Warren received three awards during the reception. The Smackover High School athletic department honored him with an award for serving as team physician for many years, he was presented with a certificate of merit from Governor Bill Clinton, and he received a special award from the people of Smackover for his outstanding services to the community. Dr. Warren was recently selected by Good Housekeeping Magazine as one of the top family physicians in the nation.

### **Dr. Verser Honored with Plaque**

Dr. Joe Verser of Harrisburg was recently presented with a plaque acknowledging his service as chief of staff at Craighead Memorial Hospital for the last two years.

### **Physician Inducted into Hand Association**

Dr. Maurice J. Elovitz of Helena was inducted as a member of the Arkansas Hand Association at the November meeting of the Arkansas Orthopedic Association in Heber Springs.

### **Physicians Named to ABFB**

Dr. Robert A. Hoagland of Dumas, Dr. Kevin R. Carlson of DeQueen, and Dr. Thomas L. Buchanan of Morrilton have been named diplomates of the American Board of Family Practice.

### **Dr. Sanders Speaks**

Dr. James Sanders of Jonesboro was guest speaker at a recent meeting of the Jonesboro Chapter of United Ostomy Association.

### **Physicians Begin New Medical Service**

Dr. Jan Scruggs and Dr. Richard Y. Henry, ophthalmologists of North Little Rock, have begun practicing two days each week at the Marshall Road Clinic in Jacksonville.

### **Physicians Named to Health Advisory Board**

Governor Bill Clinton has appointed the following members of the Society to the Perinatal Health Services Advisory Board: Dr. Wayne Workman of Blytheville, Dr. Sue Chambers of Harrison, Dr. Harold Betton of Little Rock, Dr. Robert Fiser, Chairman of the Department of Pediatrics at the University of Arkansas Medical Sciences Campus, and Dr. Ralph Wynne, Chairman of the Department of Obstetrics at the University of Arkansas Medical Sciences Campus. This board is authorized to coordinate the planning, development and implementation of a statewide network of perinatal health care services and to advise the Governor on perinatal health care policies.



## RESOLUTIONS



### DR. WILLIAM L. FULTON

WHEREAS, the recent death of William L. Fulton, M.D., a respected member of this Society for the past thirty-three years is noted with sincere sorrow; and

WHEREAS, Dr. Fulton had devoted his time and talents to the betterment of the Society having served in positions of responsibility throughout the years; and

WHEREAS, his devotion to the well being of his patients and to his community were recognized and appreciated.

BE IT THEREFORE RESOLVED:

THAT, this resolution be made a part of the permanent records of this Society, and

THAT, Dr. Fulton's family be sent a copy of this resolution as an expression of the Society's sincere sympathy; and

THAT, a copy of this resolution be sent to the Journal of the Arkansas Medical Society for publication.

By Direction of the Memorials Committee  
T. Duel Brown, M.D., Chairman  
Robert Watson, M.D.  
Henry Hollenberg, M.D.  
Pulaski County Medical Society

### DR. W. MAGE HONEYCUTT

WHEREAS, the recent untimely death of our colleague, W. Mage Honeycutt, M.D., has caused the members of this organization deepest sorrow and regret; and

WHEREAS, Dr. Honeycutt had, since joining the Society seventeen years ago, been an enthusiastic supporter of its programs and community services; and

WHEREAS, he had achieved professional recognition for his outstanding contributions to many clinical studies in dermatology; and

WHEREAS, he had earned an enviable reputation as a private practitioner in the community.

BE IT THEREFORE RESOLVED:

THAT, we make this resolution a part of the permanent archives of this Society; and

THAT, we forward a copy of this resolution to Dr. Honeycutt's family as an expression of our appreciation for his life; and

THAT, a copy of this resolution be forwarded to the Journal of the Arkansas Medical Society for publication.

By Direction of the Memorials Committee  
T. Duel Brown, M.D., Chairman  
Robert Watson, M.D.  
Henry Hollenberg, M. D.  
Pulaski County Medical Society



## NEW MEMBERS

The Benton County Medical Society has added one active member to its roll:

### DR. BERNARD J. BALTES

Dr. Baltes was born in Iowa and was graduated from the Loras College in Dubuque, Iowa, in 1942 with a B.S. degree in Chemistry. Dr. Baltes received his M.D. degree in 1958 from the University of Illinois College of Medicine in Chicago. He interned at the Elmhurst Memorial Hospital of DuPage County in Elmhurst, Illinois.

Dr. Baltes served from 1943 to 1946 in the United States Army, as Technical Sergeant. Dr. Baltes practiced in Chicago for fourteen years before coming to Arkansas. He is a member of the American Association for the Study of Headaches, National Migraine Foundation, and the College of Clinical Pharmacology and Chemotherapy.

Dr. Baltes is in general practice at Gravette.



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February, 1980

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**BUSINESS OFFICE**  
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**SCIENTIFIC ARTICLES**

Current Uses of Endoscopic Retrograde Cholangiopancreatography .....	351
<i>Jack L. Blackshear, M.D.</i>	
New Health Practitioners and Arkansas .....	353
<i>Kemal Kutait, M.D., and David Busby, M.D.</i>	

**FEATURES**

Office Orthopaedics: "The Nail-Gun/Staple-Gun Injury" .....	361
<i>R. Barry Sorrells, M.D.</i>	
ECG of the Month .....	364
<i>John Watson, M.D.</i>	
Pediatric Review: "An Approach to Cyanosis in the Newborn" .....	365
<i>R. Readinger, M.D., J. B. Norton, M.D., and W. T. Dungan, M.D.</i>	
Editorial: "Hormone Receptors" ...	367
<i>Alfred Kahn, Jr., M.D.</i>	
Medicine in the News .....	369
Keeping Up .....	375
Personal and News Items .....	376
Things to Come .....	377
New Members .....	378
Obituary .....	280
Resolutions .....	280

# Current Uses of Endoscopic Retrograde Cholangiopancreatography

Jack L. Blackshear, M.D.\*

Since the introduction of this technique by the Japanese in the early 1970's our knowledge of the pancreato-biliary system has expanded greatly. By non-invasive means, accurate diagnosis of disease in a remote, but important area of the abdomen is possible.<sup>1</sup> It is attended by few serious complications.<sup>3</sup> Cannulation of the common bile duct and pancreatic duct and outlining their course is successful a majority of the time when thoughtfully performed by a knowledgeable endoscopist. Radiographic findings of obstruction or stenosis are highly correlated with disease in the pancreatic duct and biliary tree.

## I. ERCP in Pancreatic Disease—Indications

- A) Recurrent pancreatitis.
- B) Suspected pancreatic mass.
- C) Chronic or recurrent undiagnosed epigastric pain.
- D) Recurrent cholestasis or cholangitis in patients with chronic pancreatitis.

ERCP in a patient with acute pancreatitis is not justified unless surgical relief of obstructive jaundice or known pseudocyst operation is imminent. Precipitating pancreatic sepsis with ERCP in a patient with acute pancreatitis is associated with a 20% mortality rate.<sup>7</sup> Injecting bacteria and hyperosmolar renografin into an immature pseudocyst may precipitate pseudocyst sepsis. Operation for a pseudocyst before a mature capsule has developed invites disaster.<sup>5</sup> Therefore, ERCP, when possible, should be delayed a month after an attack of pancreatitis. Abnormalities of the pancreatic and biliary ducts may be found in 20-30% of patients with unexplained pancreatitis.<sup>7</sup> These include local duct obstruction or stenosis and common bile duct stones.

In chronic pancreatitis, ERCP is not the primary diagnostic tool but is useful pre-operatively for surgical management of chronic pain. Again,

biliary tree abnormalities occur in 10-20% of patients who have known chronic pancreatitis.<sup>7</sup> These abnormalities include stones and strictures of the intrapancreatic common bile duct.

Evaluation of the benign pancreatic mass involves differentiating true cysts and cystadenomas from pseudocysts. Pseudocysts sometimes communicate with the pancreatic duct and thus are readily diagnosed with retrograde pancreatography. The others may displace the pancreatic duct from its usual course.

ERCP is accurate (92%) in diagnosing cancer of the pancreas and biliary tree.<sup>4</sup> Because it is sometimes difficult to differentiate from chronic pancreatitis radiographically, malignancy is suggested by the clinical triad of pain, weight loss, and jaundice.

The usefulness of ERCP in pancreatic cancer is currently academic. Patients usually present to us with non-curable disease. Early diagnosis may salvage future patients but a more cost-effective screening test is needed. A normal pancreatogram is reassuring.

## II. ERCP in Bile Duct Stenosis

Distal common bile duct stenosis may be benign (pseudocyst, chronic pancreatitis, post-surgical papillary stenosis) or malignant (primary or metastatic). The "double duct" sign is particularly ominous.<sup>4</sup>

Proximal common duct stenosis is usually malignant except for post-cholecystectomy strictures.

In patients with intact gallbladders, failure to opacify the cystic duct with antegrade or retrograde injection strongly implies cystic duct obstruction. Some patients with distal common duct stenosis may not opacify a normal cystic duct on retrograde injection.<sup>7</sup> The reason is unclear.

Intrahepatic bile duct stenosis may be secondary to hepatoma, cirrhosis, sclerosing cholangitis, polycystic hepatorenal disease, or metastatic cancer.

\*650 Medical Towers Building, Little Rock, Arkansas 72205.



### III. ERC in Choledocholithiasis

Three problems are identifiable:

- A) Unremoved stones may cause serious problems.
- B) Presence or absence of stones may be difficult to determine.
- C) Even the most careful surgery may not remove all stones, or, they may form again.

ERC can localize these stones and, unlike intraoperative cholangiography, does not cause distal impaction. The ability to uncover tiny stones is greater, particularly when using dilute renografin (30%). Air bubble artifact remains unsolved.

IV. Besides the preoperative diagnosis, ERCP findings that are of value to the surgeon during laparotomy are:

- A) Histology of a periampullary tumor.
- B) The presence or absence of a pancreatic pseudocyst and its location.
- C) Presence of sinuses from a pseudocyst into the mediastinum or other difficult to detect location.
- D) Presence of and location of strictures or other obstruction of pancreatic duct.
- E) Anatomic abnormalities of the bile ducts.
- F) Presence of and numbers of common bile duct stones.
- G) Location of and length of a stricture of the common bile duct.
- H) In selected cases of cholecystitis where common bile duct exploration is anticipated.

### V. Endoscopic Electrosurgical Sphincterotomy<sup>6</sup>

This new therapeutic endoscopic procedure has gained favor world-wide. As of October, 1978, 4,650 successful procedures were performed mainly in Germany and Japan. Morbidity is 7.2% with major complications being hemorrhage, retroperitoneal leak, pancreatitis, and cholangitis. Mortality is 0.9%. The U.S.A. experience with 440 cases as of May, 1978 is almost identical.<sup>7</sup> Early experience with the procedure is attended by a higher complication rate, as with ERCP.<sup>3</sup> This procedure is not recommended for the occasional endoscopist. One must be able to selectively cannulate the common bile duct for this procedure to be successful.

Indications include:

- A) Residual or recurrent common bile duct stones after cholecystectomy.

- B) Common bile duct stones in high operative risk patients with an intact gallbladder.
- C) Papillary stenosis in patients without stones.
- D) Ampullary tumors. This is a palliative attempt to relieve jaundice and create a better candidate for a Whipple's procedure.

### Summary

Useful indications for ERCP include:

- A) Differentiating surgical from medical jaundice.
- B) Defining the nature of a palpable abdominal mass.
- C) Strong suspicion of a pancreatic tumor.
- D) Chronic pancreatitis, painful enough to suggest surgical relief.
- E) Definitive evaluation of an abnormal amylase, ultrasound or CT scan, or an abnormal duodenal sweep on the upper GI series.
- F) Strong suspicion of cholelithiasis when other diagnostic procedures fail.
- G) Non-visualizing gallbladder on peroral or I.V. route, especially when jaundice is present.
- H) In preparation for endoscopic electrosurgical manometry and papillotomy.

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# New Health Practitioners and Arkansas

Kemal Kutait, M.D.,\* and David Busby, M.D.\*\*

The phrase, "new health practitioners", has been used in the relatively recent past by the AMA to refer to physician's assistants and nurse practitioners.<sup>1</sup> Various societal groups have used this phrase when referring to other para-medical professionals, such as, the clinical pharmacist, the physical therapist, the nutritionist, the orthotist and prosthetist, the EMT, the social worker, etc. Both the trendy politician and the Naderian Messiah propose to utilize the "new health practitioners" to solve the physician maldistribution problem.

Perhaps the best example of this type of attitude comes from David Calkins, M.D. Dr. Calkins is currently a Special Assistant to the HEW Secretary. In 1978, while in a White House Fellowship program, he was interviewed by the *American Medical News*. On the subject of physician manpower he stated, "I have long been concerned with how to make better use of nurse practitioners and physician extenders. In this area, we can learn a lot from the Chinese. The barefoot doctors are less highly trained than the physician extenders in this country, yet they are capable of fulfilling a very important role in the delivery of rural health care".<sup>2</sup>

The first type of physician extender was the physician's assistant. The physician's assistant educational programs are fairly uniform. Most of these programs are university administered and grant a B.S. degree after four years or more. The last two educational years are clinical training through preceptorships. These programs were primarily funded by the federal government. By 1976 there was an estimated 4600 graduates of these programs.<sup>3</sup> Some universities are phasing out these programs because their graduates are finding diminishing opportunities for employment.<sup>4</sup>

The nurse practitioner movement began offi-

cially in the Southeastern U.S.A. in 1965. The first utilization of nurses as "practitioners" began at least 10 years earlier with the development of the Frontier Nursing Service in Kentucky.<sup>5</sup> Although the nurse practitioner program began only 14 years ago there are reportedly 9634 licensed nurse practitioners in America with 500 of them self-employed.<sup>6</sup>

The definition of a nurse practitioner is variable depending on the source consulted. The American Nurses' Association states that the nurse practitioner "provides direct care to individuals, families, and other groups in a variety of settings—homes, institutions, offices, industries, schools and other community agencies. The nurse practitioner engages in independent decision-making about the nursing care needs of clients and collaborates with other health professionals, such as the physician, social worker, and nutritionist in making decisions about other health care needs. The nurse working in an expanding role practices in primary, acute, and chronic health care settings. As a member of the health care team the nurse practitioner plans and institutes health care programs".<sup>7</sup>

Although the ANA has a definition of the nurse practitioner there is no nationwide definition of necessary training. The nurse practitioner is a registered professional nurse with either a Diploma, Associate Degree, or Baccalaureate Degree who has received from a few months to two years of additional training in physical diagnosis and other subjects related to medical and nursing care beyond their basic nursing education, and who has earned either a Certificate or a Master's Degree attesting to expanded competence.<sup>8</sup>

The earliest nurse practitioners in Arkansas were mostly ADN's with an additional nine months training. Currently all the Baccalaureate Degree registered nurses from the UAMSC at Little Rock are nurse practitioners after completion of a 5 year program. The University of Arkansas nurse practitioner program is centered around expansion of the traditional nursing

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\*President-Elect, Arkansas Medical Society, 1120 Lexington, Fort Smith, Arkansas; Associate Clinical Professor, Family and Community Medicine, UAMS-AHEC.

\*\*Assistant Professor, Family and Community Medicine, University of Arkansas-AHEC, 100 South 14th, Fort Smith, Arkansas.



concepts. The program looks for certain role behaviors: confidence, independent decision-making, accountability, collaboration, mobility, facilitator-catalyst, continuity of care, and advocacy. In Arkansas the nurse practitioner is not being trained to function independently (without physician supervision).<sup>9</sup>

In 1977 the Arkansas legislature's Act 415 dealt with the "Physician's Trained Assistant Program". This act was made up of 2 parts. The first part permits the delivery of quasimedical service to a segment of the State by persons who are not as well educated and trained as an MD. The second part dealt with the protection of the members of this segment (who the P.T.A.'s will serve) from injury as the result of insufficient education and training of the P.T.A. By passage of this act the legislature directed the medical profession through the Medical Board to assure that the second part of this act was complied with.<sup>10</sup>

For the Arkansas nurse practitioner it is difficult to find a position that will utilize her training. The receptivity of the nurse practitioner is poor for many reasons. The past experience with other poorly educated nurse practitioners has left physicians and communities with a poor regard of the capabilities of nurse practitioner. The national controversy and confusion among nurses is highlighted by several individuals who are eloquent speakers and leaders who make controversial and sometimes inappropriate comments to help solidify the nurse practitioner movement. Many of these comments appear to challenge the existing health care system while other comments attempt to bolster the feminist movement and only obliquely relate to the nurse practitioner movement.

The controversy about the role of the nurse practitioner in the present health care system is typified by Dr. Ingeborg G. Mauksch, Ph.D., F.A.A.N. She questions, "Why can I, as a nurse, not admit or discharge a patient from the hospital? A nursing home"? She suggests a reimbursement level for nurses of 80%. This would serve two purposes she says—(1) for cost containment and (2) as a disincentive for physicians to perform the tasks that nurses can do. She suggests that nurses can do physical examinations, histories and manage common illnesses.<sup>11</sup>

A 1978 fee schedule from a Dallas, Texas, nurse practitioner group ("Nurse Associates") shows an office visit fee of \$10.00, consultation on client's

behalf (physicians, social workers, etc.) \$5.00, and Health Assessment \$40.00.

The subject of reimbursement has often been discussed when national health insurance has been considered. In 1977, Godkins presented a report to the National Health Insurance Advisory Committee (at a regional hearing in Hartford, Conn.) suggesting that physician's assistants will impact directly on national health insurance costs. The reasons he presents: (1) production costs are significantly lower in comparison to physician manpower, (2) opportunity costs to society are recouped, and (3) delivery costs will be reduced by substituting physician assistants for physician manpower when appropriate.<sup>12</sup> Godkins is the 1979 president of the Association of Physician Assistant Programs (APAP). Mr. Godkins, writing in the July 1978, *Oklahoma State Medical Association Journal*, stated that a recent study found an average office visit fee of almost \$15.00 in three practices employing physician's assistants.<sup>13</sup>

The subject of acceptance of the nurse practitioner by the medical profession has been reported by many individuals utilizing different techniques. Jules Levine, Ph.D., et al, reported the results of a "comprehensive study". In his study the tasks most frequently performed by the nurse practitioner were evaluated by the physicians. The obtaining of historical information was reported by over 90% of NP's as something they often did. The physician evaluation rated these as excellent in 73%. Independent activities by the nurse practitioner (prescribe meds, order x-rays, read culture plate, etc.) and the provision of inpatient care were infrequently performed (less than 50% of the NP's surveyed reported often performing these tasks). The evaluations of these tasks (by physicians) was excellent about 70% of the time.<sup>14</sup>

In a study specifically dealing with physician receptivity to nurse practitioners in North Carolina, Robert Lawrence, M.D., et al, report 34% of those physicians responding would hire a nurse practitioner. Fifty two percent approved of the concept but would not hire one. Most physicians preferred to have their own nurse trained as a nurse practitioner in a training program that combined a didactic course at a medical center with on the job training.<sup>15</sup>

Receptivity of the new health practitioners is perhaps reduced because they are felt to be a competitive economic challenge. The challenge to the

established health care services is highlighted by Robert Spencer, M.D. and Roger Ready, R.N. They report that nurse practitioners can be trained as "Nurse Endoscopists" and pass a savings on to the patient "while passing the scope". They report that these nurse endoscopists can be trained to do endoscopic fulgurations.<sup>16</sup> Many primary physicians in the South and Southwest would question the rationale for this. In most centers of this region, endoscopy is a highly skilled discipline usually requiring subspecialty board certification or eligibility.

Loretta Ford, R.N., Ed.D. describes the past, present, and future of the nurse practitioner as, "A deviant of yesteryear, the norm of today, and the traditional of tomorrow". She reports that the nurse practitioner is often employed by industry and is in a unique position to introduce health maintenance programs, to monitor hazards in the work place, and to identify stresses and strains that workers experience.<sup>17</sup>

Haller & Collins reported in 1978 on a case report of a rural health center. Their report dealt with patient acceptance of the nurse practitioner. Visit rates initially were 300/month but later grew to 800/month. After a period of time the rates dropped to 375/month and the supporting community withdrew from the project. They report that patients appeared to want to utilize the primary care physician as their contact on entry into the health care system. Patients demonstrated that they would "exhaust other means, including traveling considerable distances or forego health care" rather than use this form of health care delivery.<sup>18</sup>

An article by Sox reviewed over 40 articles that dealt with the competence of the physician assistant and the nurse practitioner. In the article he feels that these studies show that they provide office-based care that is "indistinguishable" from physician care. However, in the conclusion of his article he is contradictory. "Although there have been 21 controlled studies reported in the past decade, many are of limited usefulness. In fact only four investigators used detailed quality of care measures, studied general office care, and had patient groups that had been adequately characterized and appeared comparable." He does state that there is *no* experimental basis for concluding that the quality of care provided outside the office (unsupervised) or care of the seriously

ill patient by the nurse practitioner is equivalent to that provided by a physician.<sup>19</sup>

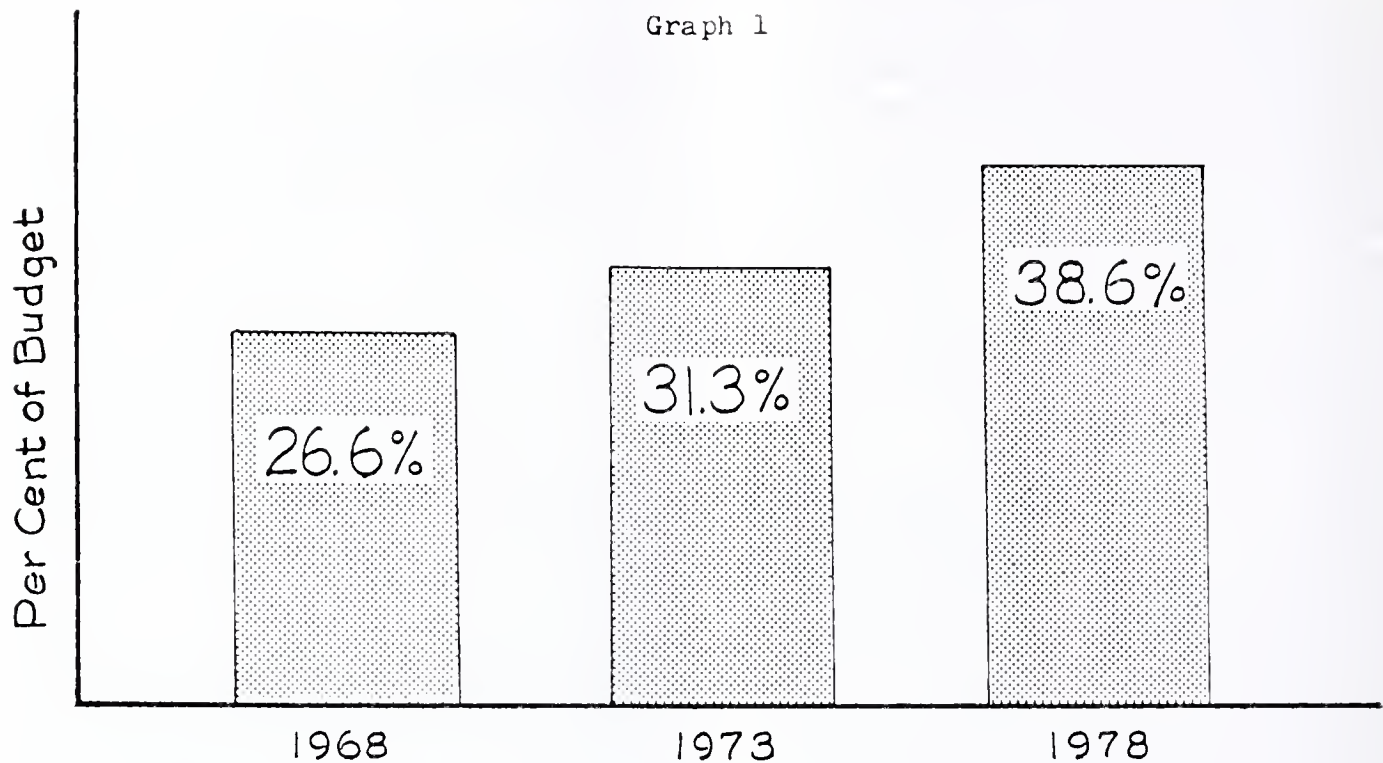
A study by the National Academy of Sciences about policy options regarding primary health care manpower was reported by Scheffler, et al. As is widely known, there is no shortage of physicians but rather a shortage of primary care physicians. This may change in the near future with more emphasis placed on the training of primary care physicians. In 1975 there were 30% more active physicians (340,280) than in 1968. If current enrollment trends continue there will be 559,800 physicians by 1990. Projections indicate there will be 23,000 nurse practitioners and 18,000 physician's assistants by that time.<sup>20</sup>

With the above statistics in mind, questions regarding the new health practitioners arise. What impact will the 23,000 nurse practitioners and the 18,000 physician's assistants have on the total health care delivery system? What need will there be for these individuals? The growth rate in medical manpower is tremendous while the national birth rate has been of lesser magnitude (See Graph 1). The post war baby boom is over and many public schools have seen a reduction in enrollments. This is highlighted by colleges actively advertising for students as supply has overshot student demand. This could happen in medicine and could help diminish the professionalism that is the hallmark of medicine.

Although a maldistribution and/or shortage of physicians exists in portions of Arkansas, this should improve in the very near future. The University of Arkansas for Medical Sciences began to address this problem in the early 1970's. Under the leadership of Dr. Shorey, and with the help of Dr. Dennis and Dr. Bost, the AHEC program began. The legislature was supportive of this concept and helped Arkansas become a leader in this field. The Area Health Education Center Program was formulated for several reasons. The development of regional libraries, the development of senior medical student rotations, the development of continuing education programs for medical personnel, the training of allied health personnel, and the establishment of primary care residency programs were the goals of the AHEC project. The funding was wisely provided by the legislature after the goals and background information was provided. The major reason for establishing primary care resi-



Graph 1



## % of UAMS Budget for Primary Care

dencies in several areas of the state was that a majority of physicians tend to stay within 75 miles of where they have trained.

With that in mind Family Practice residencies were started in Pine Bluff, Fayetteville, and Fort Smith. Two other programs have been provisionally accredited for 1980 in Jonesboro and El Dorado. When all programs mature there will be 28 first year resident slots each year. The largest AHEC Family Practice residency (Fort Smith) now takes 8 residents per year and currently has 21 residents.

The experience at Fort Smith reveals that all of the past residents that are currently in practice are in Arkansas. Although some residents left after partial completion of the 36 month program, the goal of having physicians practice in smaller communities is being reached. Past Fort Smith residents now practice in Salem, Monticello, Clarksville, Dardanelle, Mountain Home, and Paragould.

The total AHEC budget in 1974 was 1.25 million and will be 3.9 million in fiscal year 1980. Of this, 2.37 million is state support with the remaining coming from federal grants and generated revenues.

In addition to the AHEC program the pediatric training program was expanded and a family practice residency was started at Little Rock. In

1978 there were 32 Family Practice residents at the LR Medical Center. (See Table 1) The UAMS budget has consistently shown major increases for primary care. This is shown in graph number 1.

Another program to help with the Arkansas physician maldistribution was a program begun by the Dean (Dr. Bruce). Through the Office of Research in Medical Practice, studies were (and will be) conducted to determine what type of individual decides to practice in a rural community. Another major part of this research was to

Table 1

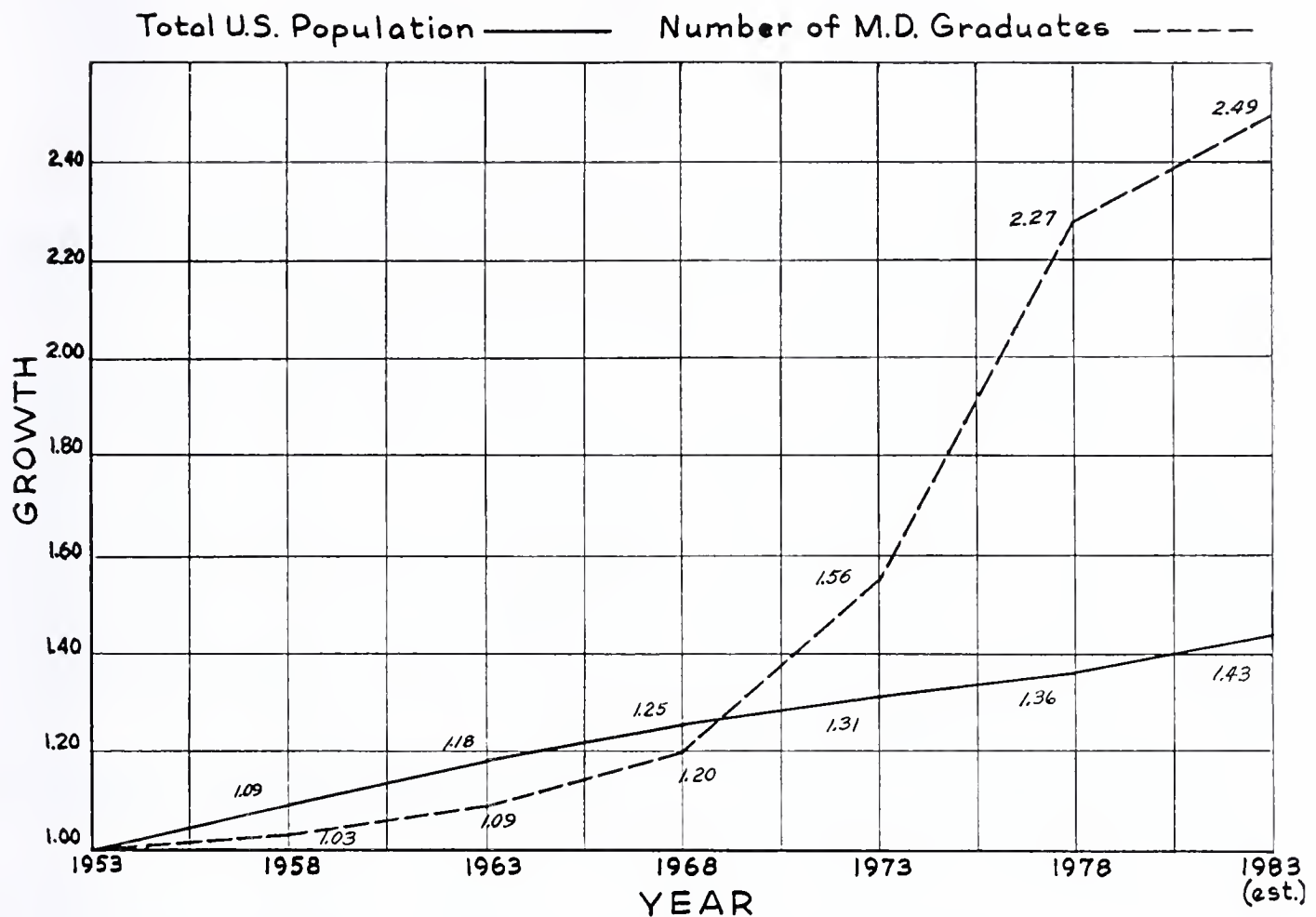
	1968	1973	1978
% of UAMS budget for Primary Care	26.6%	31.3%	38.6%
Number of Internal Medicine House Staff*	22	57	99
Number of Pediatric House Staff	15	15	30
Number of Family Practice House Staff	**	16	32***
Total House Staff	137	201	238

\*Includes flexible interns

\*\*Began after 1968

\*\*\*Does not include AHEC residents

# GROWTH, USING 1953 AS 1.00



determine why some physicians leave small rural communities. The conclusions from this research may help in the selection of medical students who may go to smaller communities. The information gained by this research may also help the school administration develop a program to prepare the student to more appropriately select his practice site and reduce physician attrition.

The shortage and/maldistribution problem in Arkansas is sometimes presented by individuals who quote only selected statistics. Information from the HEW reveals there are nearly 30 counties designated manpower shortage areas and 10 counties with partial manpower shortage designations. These are misleading. Logan County is listed as a shortage area. However, this year three physicians have entered practice there with a fourth reportedly coming in the near future. South Sebastian County has partial manpower shortage designation. Fort Smith is in Sebastian County and has close to 200 physicians. The HEW now has 51 physicians recruited or requested throughout the state.<sup>21</sup> There are currently 457 physicians practicing in towns of less

than 7,500 population.<sup>22</sup>

Arkansas is growing rapidly and the medical schools in states surrounding Arkansas (and Arkansas) are expanding greatly. (See Table 2.) In addition, there has been a large number of physicians moving to most of these states. In 1978, 122 graduated from the UAMS medical school.<sup>23</sup> There were 318 physicians licensed in 1978 in Arkansas. Texas was even more dramatic with 754 graduates but 2727 new physician licenses

**Table 2**  
**Graduates by Year**

	1968	1973	1978	1968-1978
Arkansas	84	99	122	+ 36
Louisiana	237	302	329	+ 92
Mississippi	65	91	145	+ 80
Missouri	266	327	461	+ 195
Oklahoma	92	115	154	+ 62
Tennessee	240	321	370	+ 130
Texas	320	476	754	+ 434
Totals	1,304	1,731	2,335	+1,031

Source: Annual Reports, Medical Education in the United States, *JAMA*



were issued.<sup>24</sup> The tremendous increase in the number of physicians with an active license is demonstrated by an increase of over 11,000 in Texas and an increase over 1,200 in Arkansas (from 1970 to 1978). These statistics reveal a migration of physicians to the sun belt. Admittedly a number of physicians may be licensed in two states. However, the rate of increase should be valid as many physicians had dual licensure in earlier years also. (See also Tables 3 & 4 and the map of Arkansas and surrounding states.)

The increase in the number of medical students is not limited to the sun belt. The nationwide increase is projected to continue and by 1983 there will be 16,552 graduates.<sup>25</sup> This number is a marked change in comparison with other years. (See Table 5.)

With the birth rate as it is and a rapidly expanding physician pool, decisions regarding medical education expansion should not be made hastily. With the tremendous cost associated with increased numbers of students, Arkansas should

**Table 2A**  
**1978 Medical Schools**

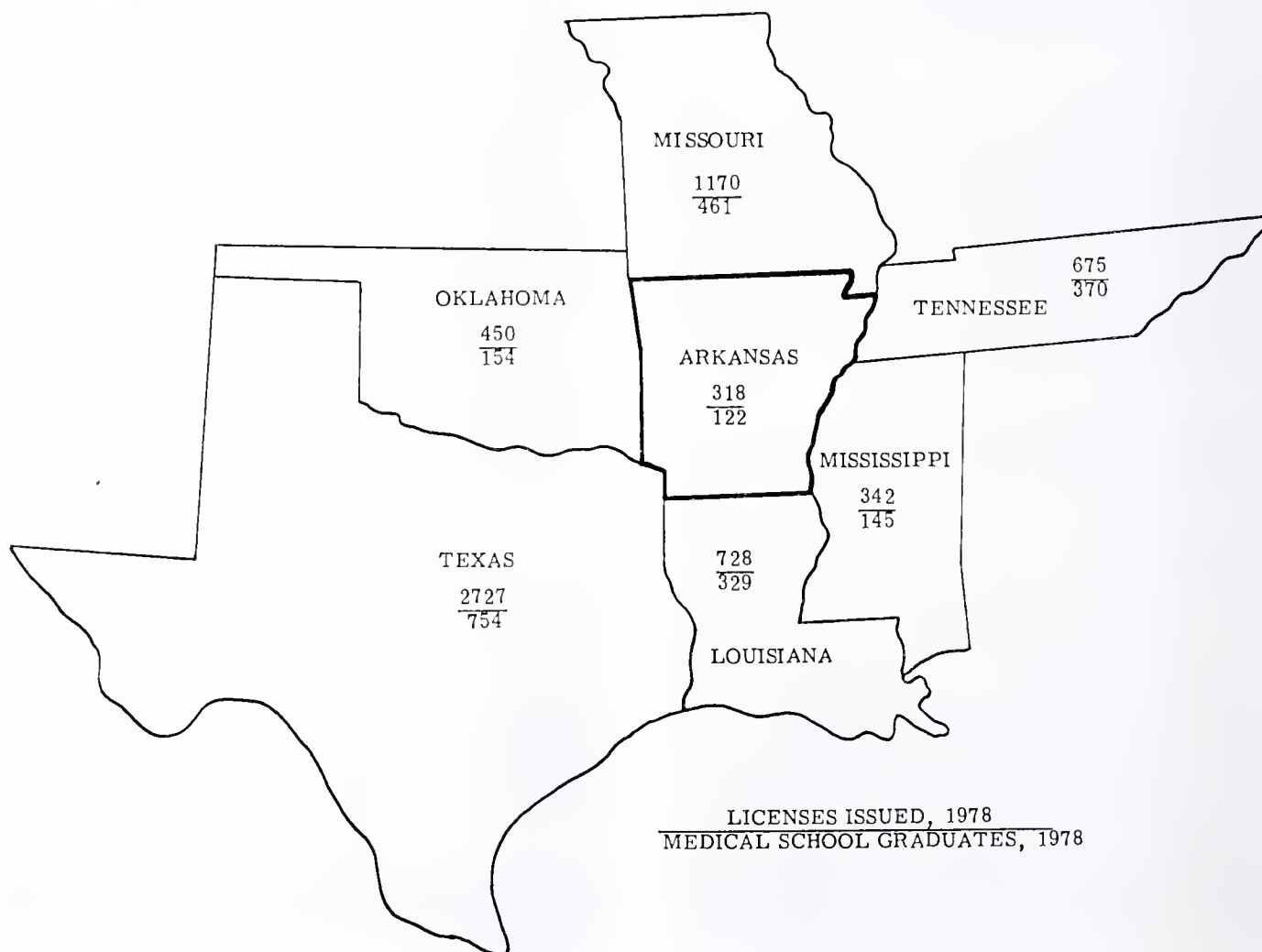
	Enrollment	Residents
Arkansas	506	253
Louisiana	1,606	796
Mississippi	599	251
Missouri	2,054	1,173
Oklahoma	675	401
Tennessee	1,570	845
Texas	3,260	2,588
Total	10,270	6,307

Source: (78th Annual Report) Medical Education in the United States (1977-1978)  
*JAMA* 12/22-29/1978.

**Table 3**  
**Number of Physician Licenses Issued**

	1975	1978
Arkansas	181	318
Louisiana	473	728
Mississippi	301	342
Missouri	1,301	1,170
Oklahoma	326	450
Tennessee	538	675
Texas	1,738	2,727
Total	4,858	6,410

Growth +1,552  
Source: Personal Communication with appropriate State Boards



perhaps re-assess the logic of continued expansion of the entering medical school class size. The "new health practitioners" should be thoroughly evaluated before consideration of their utilization since there is no uniformity of agreement among critically acclaimed articles or reviews on the quality of care.

The State Health Department is currently, under federal grant, investigating the feasibility of establishing Rural Health Clinics as described in Public Law 95-210. These Rural Health Clinics would utilize nurse practitioners with only indirect physician supervision and would allow a higher reimbursement for office visits than is currently available. At present Arkansas law does not permit the prescription of drugs by the "new health practitioners". Recently, the Tennessee Board of Pharmacy issued a warning to pharmacists to prohibit the dispensing of drugs prescribed by the physician's assistants. The Chancellor of the Nashville Chancery Court has issued an injunction that restrains pharmacists from adhering

to the Pharmacy Board warning. The Tennessee Association of Primary Health Care Centers and the Decatur County Health Council led the fight against the Pharmacy Board ruling. Without the injunction, their attorney said the clinics would have to close.<sup>26</sup> The Arkansas Health Department promises that the various regulations concerning medical practice will be followed and no laws will be violated. The Arkansas State Board of Nursing proposed regulations would allow the Nurse Practitioner to "identify and manage minor and/or acute illnesses and initiate symptomatic treatment". The scope of practice would include "... the delivery of primary, acute or chronic care which focuses on the achievement, maintenance or restoration of optimal functions in the population". At present the health department of California is considering regulatory changes that would expand the roles of "new health practitioners" in California's acute care hospitals. The changes would allow nurse practitioners, physician's assistants, and nurse midwives to prescribe medication, order lab tests, and determine therapy in hospital settings.<sup>27</sup>

The national forecast for the Rural Health Clinic program is cloudy. Thirty-seven of 371 clinics under this program have closed since Jan. 1, 1979. The appropriation for this program was for 18 million the first year and over 60 million in year two. In the first two years only 4 million dollars has been utilized. Part of this problem is due to administrative red tape within the HEW bureaucracy.<sup>28</sup>

With the above in mind, the Rural Health Clinic program may never be implemented in Arkansas. The issue of the use of the "new health practitioners" (and the Rural Health Clinics) is too important to be relegated to individuals

**Table 4****Number of Physicians with Active Licenses**

	1970	1978	1978-1970 Growth
Arkansas	3,135	4,352	+ 1,217
Louisiana	6,995	9,490	+ 2,495
Mississippi*	3,993	4,441	*+ 448
Missouri	NA	17,176	NA
Oklahoma	2,562	3,617	+ 1,055
Tennessee	5,065	8,460	+ 3,395
Texas	20,007	31,376	+11,369

\*Oldest date available 1975

NA—not available

Source: Personal Communication with appropriate State Board

**Table 5****U. S.**

	Population <sup>1</sup>	Growth*	Graduates <sup>2</sup>	Growth*
1953	160,184,000	1.00	6,668	1.00
1958	174,882,000	1.09	6,861	1.03
1963	189,242,000	1.18	7,264	1.09
1968	200,706,000	1.25	7,973	1.20
1973	210,410,000	1.31	10,391	1.56
1978	218,548,000	1.36	15,123	2.27
1983**	228,508,000	1.43	16,582	2.49

\*Growth rate based on 1953 as 1.00

\*\*Projected estimate

Source:

<sup>1</sup>Industrial Research and Extension Center, University of Arkansas

<sup>2</sup>Annual Reports of Medical Education in the United States, *JAMA*

**Table 6**

Students	
1970-1971	40,487
1977-1978	59,950

U. S. Medical Schools (Number: 122)

New Schools Planned

Oral Roberts University

Medical College of El Paso

Medical School of Mercer University

\*University of Wyoming — plans dropped — lost funding

Source: (78th Annual Report) Medical Education in the United States (1977-1978)

*JAMA* 12/22-29/1978.



unfamiliar with the total scope of medical care and the realistic needs of our State. A joint committee of members from the Arkansas State Medical Board, the Arkansas Medical Society, and the administration of the University of Arkansas Medical Sciences Center should be formed to advise the legislature about the utilization of the "new health practitioners". This group should also help to formulate methods to evaluate the quality of care provided by these individuals.

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# Office Orthopaedics

## The Nail-Gun/Staple-Gun Injury

R. Barry Sorrells, M.D.\*

The orthopedic literature is replete with information relating to injuries sustained as a result of modern-day industrial tools. The high pressure grease gun<sup>1</sup> and paint sprayer<sup>2</sup> have been described as producing injection injury to soft tissue—especially the hand. Injuries caused by motor driven saws, drills and planers have been observed and treated by most of us.

A new advancement in carpentry and construction work is the pneumatic nailer and stapler. This device is said to be five times faster than hand nailing. The nailer operates on air pressure from a compressor of 60 to 120 psi and can, with a single impact, drive a 6 d to 16 d nail into a piece of wood. The pneumatic nail or staple gun

(Fig. 1) is held with one hand (Fig. 2) and the fastening device repetitively fired into the material. The nails and staples are held together with plastic in a cartridge fashion (Fig. 3). The tip of the nail or staple is usually coated with a plastic material to enhance holding power.

Despite safety devices on the apparatus, inadvertent firing of the nail or staple can occur and injury result. Occasionally the safety device is purposely overridden by the operator and sometimes "horseplay" is the culprit. Because of the great force with which the nail or staple is expelled, considerable penetration of soft tissue and bone can occur.

This orthopedic surgeon has personally treated three cases of nail-gun or staple-gun injury. The

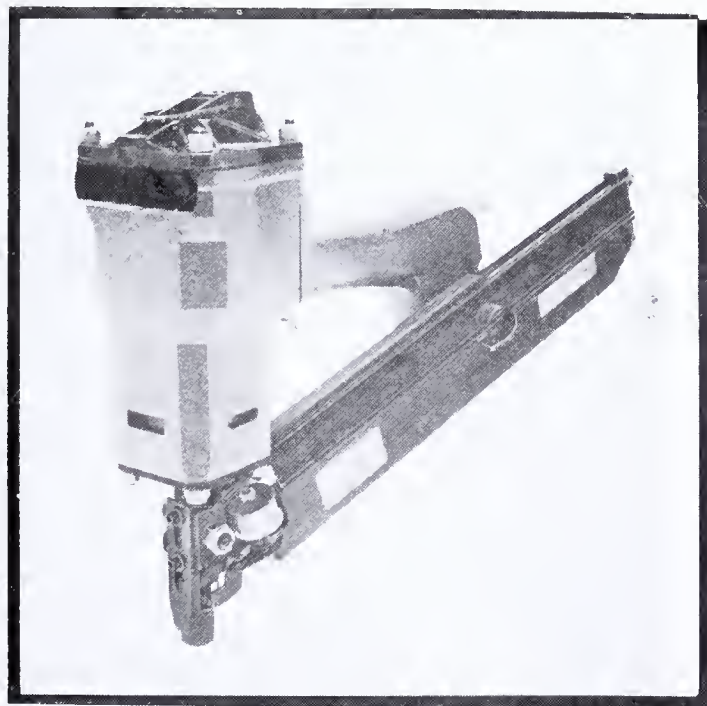


Figure 1.  
Nail-Gun.



Figure 2.  
Nail-Gun in use.



general practitioner is frequently the first to see the patient who has received such an injury and he should at least be aware of the problem although he may choose to refer the patient to a specialist for definitive treatment.

In each instance, the nail or staple remained in place at the time the patient was first seen for treatment. The patients were seen within two hours of sustaining the injury. One case involved a staple  $2\frac{1}{2}$  inches in length with entry into the knee joint; the other two patients had accidentally fired a  $2\frac{1}{2}$  inch nail into the ankle area.

Case No. 1: R. B., a 15-year-old male operating a pneumatic staple gun assembling crates had fired a  $2\frac{1}{2}$  inch staple into the supero-medial aspect of his left knee. When first seen in the emergency room, the staple had firmly attached his pants to the underlying skin and an x-ray (Fig. 4 & 5) revealed the fastening device to be within the suprapatellar pouch intra-articularly. The bone was not involved. The patient appeared to be in moderate discomfort and as expected very apprehensive.

After the patient was treated with analgesics and tetanus prophylaxis, an intravenous drip of broad spectrum antibiotics (Cephalosporin) was started. The area was then sterily prepared, the staple removed with a pair of sterile pliers and the entry point thoroughly scrubbed with an iodophor compound. Thereafter a broad spectrum diluted antibiotic solution was instilled into each puncture tract, into the joint. The patient was admitted to the hospital, observed closely for

signs of pyarthrosis and treated with antibiotics, elevation and rest. He remained afebrile, and despite a mild synovitis (perhaps chemical as a result of the foreign body) recovered without event. Formal arthrotomy and irrigation would have been performed promptly had evidence of intra-articular sepsis developed. Fortunately, this was not necessary.

Case No. 2: E. M., an 18-year-old employee of a construction firm, had accidentally fired a  $2\frac{1}{2}$  inch

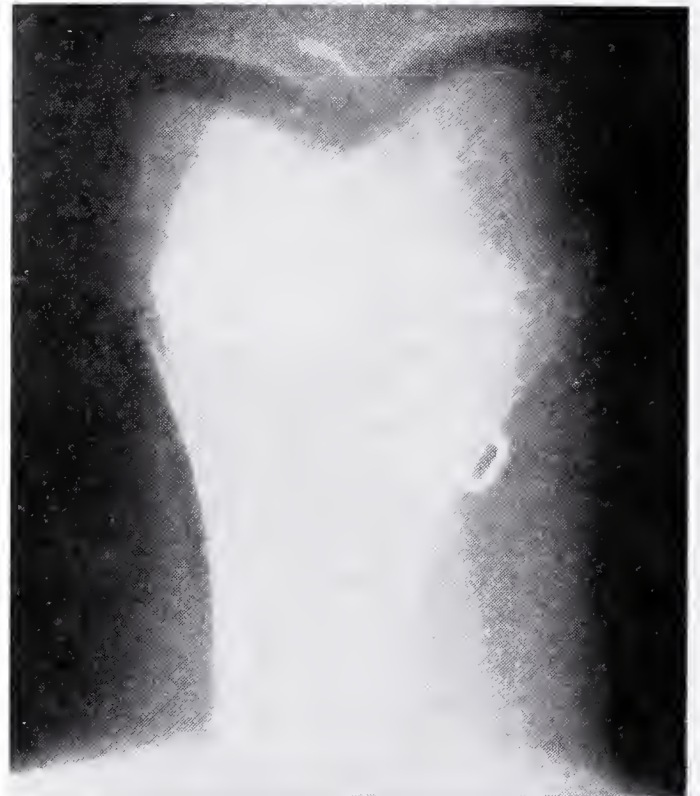


Figure 4.

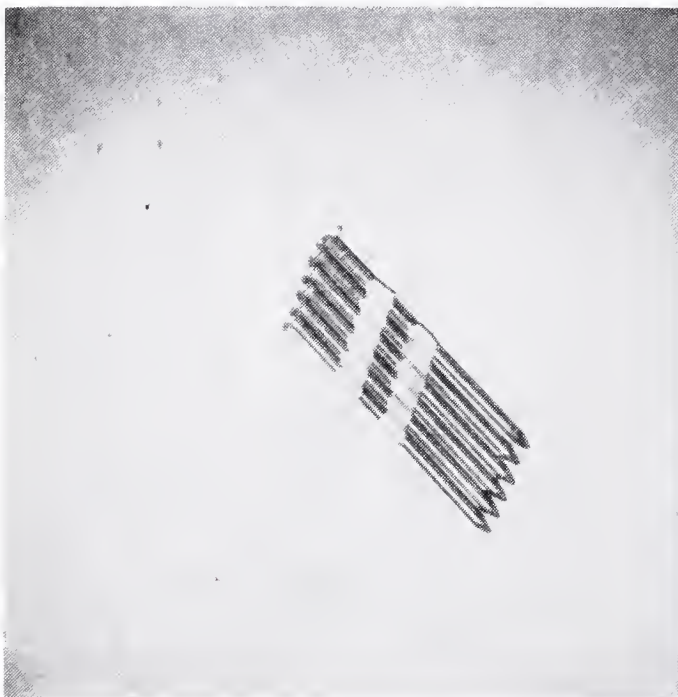


Figure 3.  
Nail Cartridge.



Figure 5.

nail from a distance of 18 to 24 inches, striking himself posterolaterally in the right distal tibia (Fig. 6). The point of the nail emerged at the anterior medial malleolus, having passed through the distal tibia but remaining free of the joint. Treatment was similar to that in Case No. 1—analgesics, i.v. antibiotics, tetanus prophylaxis, antibiotic irrigation of the nail tract, elevation, rest and observation and ultimately with complete recovery.

Case No. 3: E. P., a 22-year-old male construction worker accidentally “nailed” his left talus, subtalar joint, and os calcis (Fig. 7 & 8) from posterolaterally with a 21½ inch coated nail.

This patient was treated by an emergency department physician with germicide topical preparation, nail removal, tetanus prophylaxis, and oral antibiotics. He was later referred for orthopedic follow-up and warm soaks, rest, elevation, compression dressing and antibiotics were continued. The synovitis persisted for about a week but was resolving when the patient was last seen. He cancelled his last return appointment to the office for follow-up and is presumed to have recovered.

#### SUMMARY

The three cases of nail-staple gun injury presented represent a relatively new industrial injury. Treatment should be prompt. Analgesics, cleansing, antibiotics, elevation, rest, and close observation are indicated. The treating physician/surgeon should be prepared to surgically debride

and treat promptly at any indication of sepsis to prevent the development of pyarthrosis and/or osteomyelitis.

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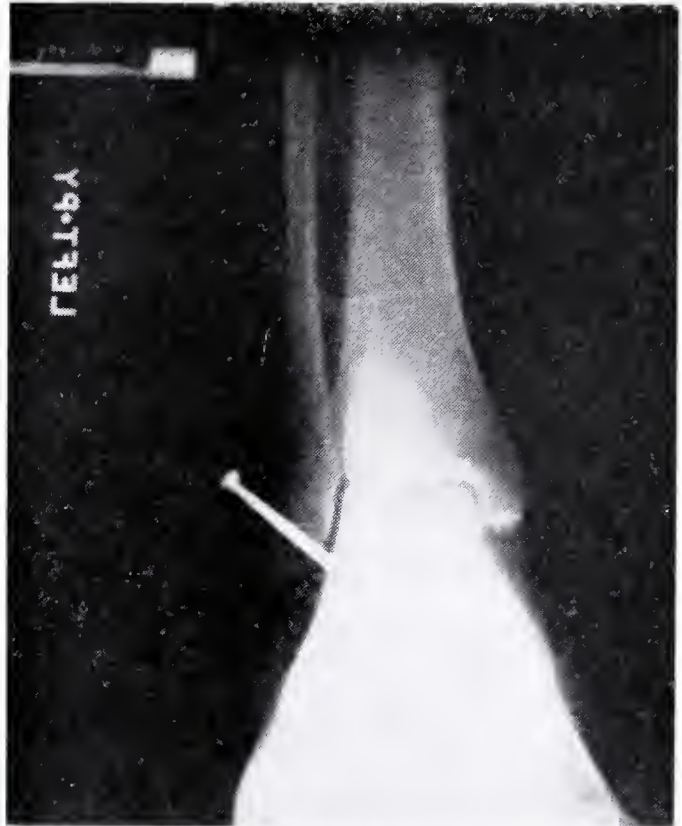


Figure 7.



Figure 6.



Figure 8.



## ELECTROCARDIOGRAM



## OF THE MONTH

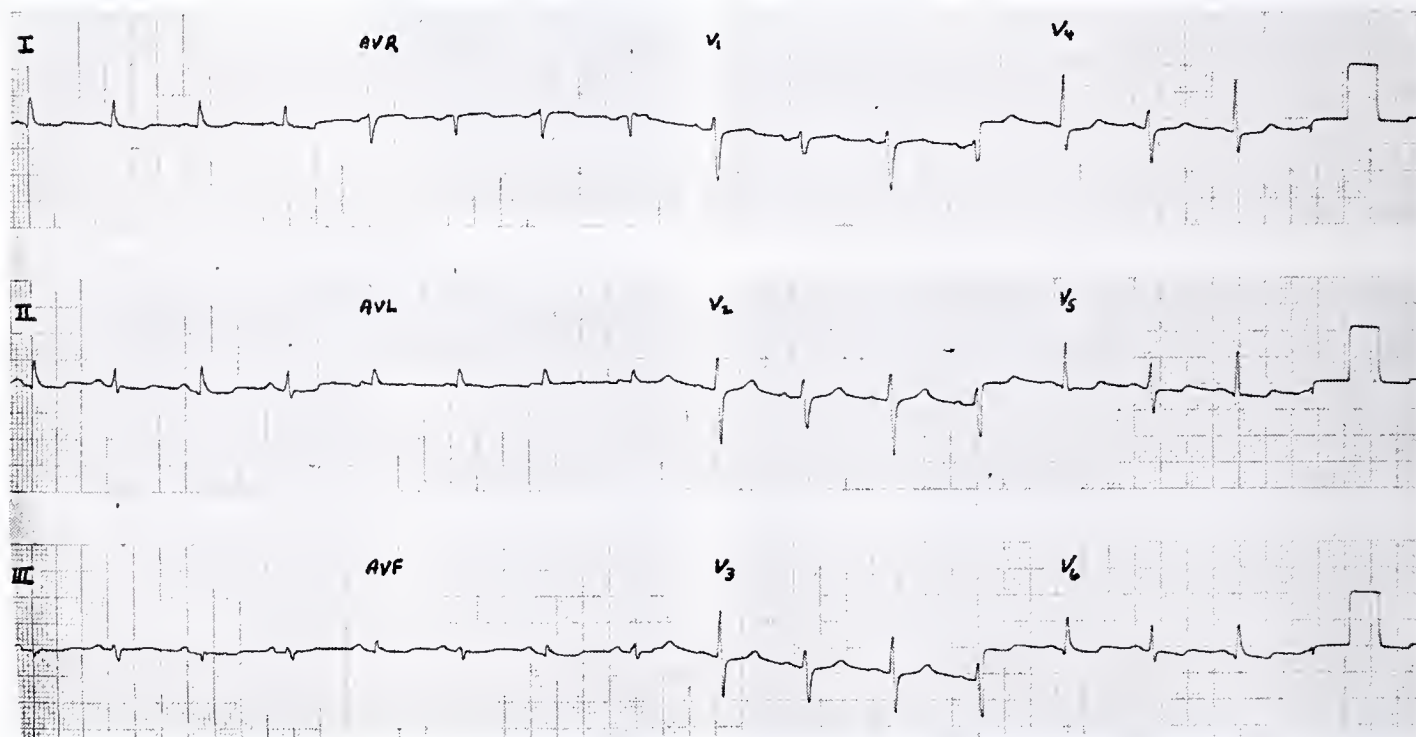
The Department of Cardiology, University of Arkansas College of Medicine

(See Answer on Page 374)

**HISTORY:** Mr. A. is a 69-year-old white man who presented to the hospital because of shortness of breath on exertion. He also had noted both the onset of edema involving his lower extremities and an increasing abdominal girth three weeks prior to his presentation. Physical examination was positive in that he was hypotensive and had moderate neck vein distension, a weakly palpable PMI, distant heart sounds, a possible S3 gallop, ascites, and edema. His ECG is shown.

Which one of the following remarks is most nearly correct?

1. The patient has "right heart failure" and electrocardiographic right ventricular hypertrophy.
2. The patient has "left heart failure" and electrocardiographic left ventricular hypertrophy.
3. The patient has acute pericarditis clinically and electrocardiographically.
4. The patient has pericardial effusion and possible tamponade.



John W. Watson, M.D.  
Assistant Professor  
Division of Cardiology  
University of Arkansas for Medical Sciences  
4301 West Markham  
Little Rock, Arkansas 72201

# Pediatric Review:

## An Approach to Cyanosis in the Newborn

R. Readinger, M.D., J. B. Norton, M.D., and W. T. Dungan, M.D.\*

The treatment of children with congenital heart disease has progressed dramatically in the last ten years. Diagnostic procedures and surgical techniques in infants have improved remarkably. The use of hypothermic cardiac arrest during open-heart surgery has allowed the repair of complicated congenital heart defects in even small infants. The young cyanotic infant with congenital heart disease has benefited most from the improvement in these surgical techniques. Transposition of the great vessels and tetralogy of Fallot, two of the most severe congenital defects in the past, can now be managed successfully. Infants with noncorrectable defects have benefited from the improvement in palliative surgical techniques.

Along with the improvement in surgical procedures, diagnosis and medical management of the cyanotic baby has progressed as neonatal centers across the country have provided specialized intensive care for infants. Cardiologic diagnosis has progressed also. The use of echocardiography and the improvement of radiographic equipment for angiography have allowed more accurate diagnosis. The improvement in cardiovascular catheters and techniques allows catheterization to be done safely in the small cyanotic infant. The Rashkind Balloon septostomy allows nonsurgical palliation and stabilization of the infant with transposition of the great vessels. New drugs are now available and many centers (including Arkansas Children's Hospital) have Prostaglandin E<sub>1</sub> (available from UPJOHN Company on an experimental basis) to allow treatment of the severe cyanotic defect that is ductal dependent. The future holds further refinement of surgical technique and improved care of these infants.

The cyanotic infant represents a true emergency situation. Often in the past, these babies have been placed in oxygen hoping that they would improve. Now, with the ability to offer treatment with hope for survival, initial recognition and appropriate management is mandatory. Once cyanosis persists for more than 30 minutes, suspicion of impending difficulty with the neonate should become apparent. The old axiom is true that once an infant is noted to be persistently

cyanotic during the first day or two of life, only one thing usually happens—*he gets worse*. Initial steps in management should be directed at establishing the malfunctioning organ system that is the cause of the cyanosis. Cyanosis in the newborn can be accounted for by four physiologic mechanisms.

Cyanosis from a fixed right to left cardiac shunt due to congenital heart disease, should be high on the physician's list of differential possibilities. These babies are usually intensely cyanotic, but not terribly distressed and often appear quite comfortable. Only as they become acidotic, will they begin to exhibit marked increase in their breathing pattern and show a compensatory hyperpnea.

Primary lung disease is perhaps the most common cause of cyanosis. These are usually small, premature infants with the majority having respiratory distress syndrome and obvious dyspnea. A few babies exhibiting cyanosis will be post mature or term and have pneumonia, sepsis, or meconium aspiration. Their physical exam exhibits marked respiratory distress with tachypnea and use of all accessory muscles of respiration. Grunting is usually quite prominent.

A third category of infant termed "the stressed infant", has no cardiac malformation but exhibits cyanosis secondary to persistent pulmonary hypertension and right to left intracardiac shunting through a patent foramen ovale and ductus arteriosus. Pulmonary arteriolar constriction and pulmonary hypertension may be caused by metabolic abnormalities (hypocalcemia, hypoglycemia, or severe cold stress), serious infectious (meningitis or sepsis), central nervous system disturbances (intracranial hemorrhage), polycythemia (Hematocrit >65), or perinatal asphyxia. A rare cause of cyanosis is methemoglobinemia which is not on the basis of oxygen transport, but on the basis of an abnormal hemoglobin. Affected infants are not usually distressed. A positive family history may be obtained as this inborn error of metabolism is a recessive trait.

The simplest method to define the cause of cyanosis is the hyperoxia test which requires only the use of oxygen and two sets of arterial blood

\*Department of Pediatrics, University of Arkansas College of Medicine, 4301 West Markham, Little Rock, Arkansas 72201.



gases. Most hospitals within the state of Arkansas have this capability. An arterial blood gas is obtained, preferably from the right brachial artery with the suspect infant breathing room air. He should then be placed in 100% oxygen by oxyhood and have the arterial blood gas repeated in ten minutes. If there is still a question of the response of his arterial  $PO_2$  to oxygen, he then should be ventilated with an Ambu bag and 100% oxygen for five minutes and the arterial blood gas repeated a third time. The different categories of infants that we have mentioned respond differently to this test. The infant with cyanotic congenital heart disease initially has a very low  $PO_2$  ( $<50$  torr). Because he has a fixed cardiac shunt, the  $PO_2$  will not rise appreciably with oxygen, and unless he is markedly distressed the pH and  $pCO_2$  will be normal. The cyanotic infant with pulmonary disease will respond differently. Initially, his  $PO_2$  will also be low, but on his baseline arterial blood gas his  $pCO_2$  may be quite elevated. In 100% oxygen, his  $PO_2$  will usually at least double. If ventilation is performed this additionally improves his  $pCO_2$  and may further improve his  $PO_2$ . This infant then can be confidently identified and treated as having pulmonary disease. The third group of infants, with cyanosis due to persistence of fetal circulation secondary to neonatal stress, will have a variable response to the hyperoxic test. Initially, the  $PO_2$  will be low and in 100% oxygen may remain low. If this is the case, then this infant needs prompt referral for further evaluation to completely exclude cyanotic congenital heart disease. Some of these infants with pulmonary vasoconstriction and right to left shunting through fetal pathways will improve with the addition of oxygen. As the pulmonary arterioles vasodilate, the ductus arteriosus constricts and the foramen ovale functionally closes. This decreases the right to left shunt and the  $PO_2$  rises. Further laboratory work-up (appropriate cultures, metabolic evalua-

tion, and blood count) is needed to delineate the etiology of pulmonary vasoconstriction. The infant with an abnormal hemoglobin, although appearing cyanotic, will have a normal  $PO_2$ .

Once a diagnosis of cyanotic congenital heart disease, pulmonary disease with cyanosis, or cyanosis secondary to neonatal stress is made, prompt treatment is necessary. Sometimes this can be accomplished at the hospital of birth, however referral is often necessary. Primary pulmonary disease can be referred to level II newborn centers located throughout the state. If the situation is severe or if cardiac disease is suspected, the baby should be referred to the neonatal-cardiac center at Arkansas Children's Hospital, where a board certified Pediatric Cardiologist is available at all times and surgical support is available when needed. Prompt recognition and evaluation of the cyanotic infant will allow a continued lowering of mortality.

#### MANAGEMENT OF THE CYANOTIC NEWBORN

- I. Central vs. Acrocyanosis — AB6
- II. Diagnosis — Hyperoxia test  
AB6 in  $FIO_2$  .9-1.0
- III. Referral to tertiary cardiac center
- IV. Cardiac evaluation, echocardiography
- V. Cardiac catheterization
  - A. Rashkind Balloon septostomy for TGV
  - B. Prostaglandin infusion to dilate ductus arteriosus
- VI. Surgery
  - A. Total correction utilizing hypothermic cardiac arrest
  - B. Palliation involving aortic-pulmonary shunt

#### FETAL CIRCULATION

The purpose of this article is not to delineate in detail blood flow in the fetus. However, some understanding of it is necessary to understand persistent cyanosis in certain newborns (stressed infants). In utero, oxygenation is supplied by the placenta, the lungs are collapsed and small

#### HYPEROXIA TEST

	Cyanotic Cardiac Disease	Pulmonary Disease	Stressed Newborn with Cyanosis
AB6	$PO_2 < 50$ ; $PCO_2$ NL	$PO_2 < 50$ ; $PCO_2 \uparrow$	$PO_2 < 50$ ; $PCO_2 \pm \uparrow$
$FIO_2$ —.2	pH-normal low	pH $\pm \downarrow$	pH $\pm \downarrow$
AB6	$PO_2 < 50$ ; $PCO_2$ NL	$PO_2 > 100$ $PCO_2 \uparrow$	$PO_2 \pm$ variable
$FIO_2$ —1.0	pH-NL	pH $\pm \downarrow$	
AB6	$PO_2 < 50$ $PCO_2 \downarrow$	$PO_2 > 100$ $PCO_2$ NL	$PO_2 \pm \uparrow$
$FIO_2$ —1.0	pH-NL		
+ Ambu			

muscular pulmonary arterioles are maximally constricted. The ductus arteriosus diverts blood from the pulmonary artery (away from the lungs) to the descending aorta, systemic circulation and back to the placenta. An atrial septal defect (foramen ovale) with a flap valve allows oxygenated blood from the inferior vena cava and right atrium to cross to the left atrium, left ventricle, ascending aorta and to the brain. With this arrangement, neither the right nor left ventricle pump the entire cardiac output. At birth, the lungs expand with the first breath and the umbilical cord is clamped eliminating the placental circulation. With expansion of the lungs, blood flow to the lungs is increased and the infants oxygenation improves, facilitating constriction of the ductus arteriosus and vasodilatation of the pulmonary arterioles. This further increases blood flow to the lungs. With enough pulmonary flow, the pulmonary venous return to the left atrium raises left atrial pressure above right atrial pressure and closes the flap valve of the foramen ovale completely eliminating the fetal pathway of blood flow. However, with severe newborn stress, this normal transition does not occur. The ductus arteriosus remains open and the pulmonary arte-

rioles remain maximally constricted. Blood flow to the lungs decreases and left atrial pressure decreases below right atrial pressure allowing the foramen ovale to reopen. Through the ductus arteriosus and foramen ovale unoxygenated blood can then flow into the systemic circulation simulating cyanotic heart disease.

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## EDITORIAL

### Hormone Receptors

Alfred Kahn, Jr., M.D.

One of the newest and most important advances in endocrinology is the work being done on hormone receptors. For a hormone to work, it has to act on some distant tissue—in fact, this is part of the usual definition—a chemical messenger acting at a distance from the cell which produces it. The hormone acts on distant cells by being attached to the cell by a receptor.

The matter of hormone receptors has been reviewed by Baxter and Funder (*New England Journal of Medicine*, Volume 301, page 1149, November 22, 1979). As they point out, the hormone might affect all cells equally or none at all if there were no receptors to act as targets on certain cells which need the hormone effect. They point out that it is difficult to identify and



quantitate receptors by direct methods—indirect methods are used including physiologic effects, antireceptor antibodies, genetic changes, etc.

There are three different types of hormone receptors. Steroid hormone receptors are said to be in the cytoplasm when they are unoccupied and in the nuclear chromatin when occupied. How the hormone penetrates the cell membrane is unknown. Baxter and Funder have an excellent diagram illustrating how the hormone receptor complex modulates nuclear chromatin's regulation of the output of RNA and messenger RNA which in turn effects the cytoplasmic proteins which in turn produces the effect desired on or by the stimulated cell. These receptors are protein substances. They vary in their distribution—glucocorticoid receptors are found in most tissues; on the other hand, androgens are found in a limited number of tissues. This in turn implies widespread effects of glucocorticoid and limited effects of androgenic hormones.

Thyroid hormone receptors are found in the nucleus of the cell, according to Baxter and Funder. This again brings up the problem—how does the hormone penetrate the cell, reach the nucleus, and interact with the receptor. Apparently thyroid hormone directly affects nuclear processes and in this capacity, thyroid hormone may regulate certain other hormones at the nuclear level. The main hormone which binds to the nuclear receptor is 3,5,3-tri-iodothyronine (T-3). The authors state that there is some evidence that thyroxine has a nuclear mode of action involving amino acids.

A third category of receptors is the catecholamine and peptide receptors. Baxter and Funder report that these receptors are on the cell membrane. They, also, are said to be predominantly protein but may contain carbohydrates and other chemical substances. It is postulated that the following schema obtains. The hormone attaches to the surface receptor. The latter acts on a regulatory protein to promote its association with quanosine triphosphate. The regulatory protein then activates adenylate cyclase which in turn activates cyclic adenosine monophosphate. Adenosine monophosphate is so to speak, the cell's internal hormone or "second messenger". The internal hormone acts by in turn stimulating kinases and other internal cellular proteins.

Baxter and Funder state that surface-receptor hormones are admitted to the interior of cells by

internalization. This may occur in areas known as coated pits or in noncoated areas. It is equally important to understand that some hormones can attach to the receptor and activate a cell without being internalized. Receptors have to have affinity to distinguish one chemical messenger from another and there are chemical and physical forces which produce this ability of a receptor to select the correct chemical messenger. Another interesting fact is that some hormones appear to be bound by cell proteins which are not true receptors.

The authors relate that some hormones may bind to several classes of receptors. One explanation given for this is that some hormones have very similar chemical make-ups, and because of this similarity, may bind to a receptor for a chemically similar hormone. Thus, the example of cortisol binding to mineralocorticoid receptors is cited; it is interesting that the activated receptor would have a mineralocorticoid effect rather than a cortisol effect. This may be a basis for so-called side effects.

The number of receptors coupling a hormone in some instances is said to have a linear relationship to response. In other cases a few receptors stimulated give a maximum response—a flip-flop effect.

An interesting problem regarding hormone receptors is the matter varying state of receptivity of the cells to the hormone. The mechanism by which this is brought about is unknown. This sensitivity of the cells to the hormone varies a good deal. Obese people are said to have a decrease in insulin receptors—and the receptors tend to increase with weight loss.

Hormones can be agonist and antagonists, as Baxter and Funder state. Often, hormones which seem to be antagonists as far as receptor action are partial agonists and thus take up the receptors but elicit a minimal response. True antagonists block the receptor.

The authors report that some clinical diseases are due to receptor disorders as testicular feminization in which the receptors are insensitive to androgens, etc. This is a relatively new field of study.

The field of endocrinology now has to include the understanding of receptors—as well as the knowledge of the hormones and the cells from which they derive.

## MEDICINE IN THE



### THE MONTH IN WASHINGTON

The Carter Administration's two-and-a-half year campaign to thwart hospital spending growth has been shot down in flames by the House of Representatives.

The vote against the Administration and for a substitute bill minus hospital cost controls was a startling 234 to 166, one of the most shattering congressional defeats pinned on President Carter.

The outcome was a resounding victory for the health provider groups that have waged a vigorous campaign against the threat of federal controls limiting hospital expenditures. Leading the fight were the American Medical Association, the American Hospital Association and the Federation of American Hospitals, the principal groups that form the Voluntary Effort (VE) to restrain hospital spending.

Congress was assured by the VE leaders in the wake of the vote that the VE program would continue unabated. "We renew our pledge to the American people and President Carter to fight inflation with every resource at our command," said James H. Sammons, M.D., AMA Executive Vice President.

Dr. Sammons applauded Congress "for its support of the demonstrated ability of the private sector to control hospital costs voluntarily. We assure Congress that its confidence in the private sector has not been misplaced," Dr. Sammons said.

"We are very grateful for this rejection of rationing and regulation," said Michael Bromberg, Executive Director of the FAH. "But the issue will not go away. We must make the VE continue to work."

Alex McMahon, President of the American Hospital Association, said the House action represented an endorsement of the Voluntary Effort. The Administration bill would have "adversely influenced patient care and created a costly addition to the federal bureaucracy," said McMahon.

President Carter said through Press Secretary Jody Powell that the ballgame isn't over. There was White House talk of attempting to revive the

measure in the Senate. However, the 68-vote margin of defeat in the House was far too large to raise any serious Administration hope of moving a control bill through the present session of Congress.

The bill approved by the House tagged as the Gephardt Amendment after Rep. Richard Gephardt (D-MO). It establishes a Commission on Hospital Costs to report to the President on success of the Voluntary Effort, on further measures that might be needed to restrain costs, and on long-range strategies on the supply and demand for health care services. It also provides for federal support of voluntary state hospital cost control programs, and the encouragement of philanthropic support for hospitals.

The discarded bill would have imposed federal expenditure controls if the VE failed to keep hospital expenditures increases below 11.6 percent a year. More than 50 percent of the nation's hospitals, including all rural hospitals, would have been exempt. Wage increases for non-supervisory workers would have been taken from the cost equation. So many exceptions were made in efforts to win votes that the measure was viewed by many lawmakers as a farce.

The humiliating defeat for President Carter highlighted one of his glaring problems in office—getting Congress to approve his legislative program. He had made the hospital bill the bellwether of his anti-inflation program and had insisted that its passage was an absolute necessity before serious consideration could be given to national health insurance.

Carter and ex-Health, Education and Welfare Secretary Joseph Califano had berated hospitals for more than two years, accusing them of being "fat and inefficient" and of conducting an intense lobbying campaign against the public interest.

Labor sided with the Administration and conducted a last-minute blitz on Capitol Hill to line up votes, to no avail.

The House vote was preceded by several hours of keen debate. After the Gephardt Amendment



won the day, the House was faced with the question of approving the Amendment or nothing. The final vote on passage was 321 to 75.

House Democratic leaders seemed baffled by the Administration's strategy on the measure. They had warned the President and his aides that their nose counts showed that the Administration's bill for standby federal controls didn't have the requisite support in the House. Despite their warnings, the President sent word to schedule a vote, apparently choosing to believe more optimistic predictions from his legislative aides.

The House Rules Committee had delayed the vote for a week after opponents of the bill on the Committee showed surprising strength by refusing to accept the desires of Administration forces for a parliamentary procedure that might have picked up some additional votes.

Unable to secure a rule that would have tied a vote on the Gephardt Amendment to a vote to recommit, thus making the bill's opponents vulnerable to political charges they were against doing anything about the hospital cost situation, Rules Committee Chairman Richard Bolling (D-MO) reluctantly acceded to President Carter's wishes and sent the bill to the floor. The "Rule" granted a separate vote on the Gephardt Amendment.

House Speaker Thomas O'Neill (D-MA), an Administration supporter, told reporters before the vote that the Administration would lose by an "overwhelming" margin, breaking all of the rules of pre-vote strategy. (He later made a stem-winding speech on the House floor in favor of the hospital bill). Similarly, Rules Chairman Bolling was seething when he made clear at the Rules Committee hearing that he was clearing the bill at that time only at the behest of the Administration.

The chief thrust of the opponents during debate was that the Administration measure threatened to impose a new level of burdensome red tape on hospitals that could lead to higher regulatory costs, (a proponent of the bill calculated the cost of the program at \$25 million), and that it also would stifle purchase of quality equipment and services and lead to rationing of health care.

A major point was that the VE program had been a resounding success in muting inflation in hospital costs.

Scores of lawmakers rose to attack the Administration plan. Many were Congressmen who battled the plan in the House Ways and Means and House Commerce Health subcommittees. Rep. Gephardt, author of the substitute bill that carried the day, told the House that the main point of his bill "is to keep us on the voluntary path rather than going down the mandatory path." Hospital costs for the first seven months of this year have risen less than the general rate of inflation, he noted.

Rep. Dave Stockman (R-MI), a prominent critic of the Administration plan, said the inflation gap between hospitals and the rest of the economy has vanished since the measure was first sent to Congress, and with the closing of the gap "there no longer is a case for this kind of hastily devised, jerry-built control measure."

Another outspoken foe of the Administration bill, Rep. Phil Gramm (D-TX), noted that 30 state officials are regulating 30 hospitals in Connecticut. If that ratio is applied to the nation, there will be 25,000 federal bureaucrats controlling hospital expenditures, he said.

Rep. David Satterfield (D-VA) highlighted one of the principal concerns of the medical and health professions—that the Administration plan was "a decisive step toward a federalized centrally-controlled and managed health care delivery system."

Enactment will drive the American system toward the plight of the British system where "the lack of access to needed care has now become so acute that a major British union recently insisted upon supplementary private health insurance for its members," he told the House.

Rep. James Broyhill (R-N.C.) said that even if the optimistic predictions of savings under the Administration's controls were correct, the impact on overall inflation through the Consumer Index would be only one-tenth of one percent in 1981.

The Voluntary Effort is working, the Congressman declared. He said that the success of the North Carolina Voluntary Effort plan "demonstrated that this serious problem can be addressed without government intervention."

Rep. Robert Michel (R-IL) said that if the cost control bill were implemented there soon would be news stories about patients who could not get proper treatment or who were denied entrance to

hospitals. "There is risk in this bill and the risk could be deadly," he warned the House.

The House was urged to accept the Gephardt measure and "follow the mandates of the American people who are demanding less bureaucracy" by Rep. James Jones (D-OKLA). "Let us allow the ingenuity of the industry to work to hold down these hospital costs," he said.

Rep. Jim Santini (D-NEV) said the first Administration bill for mandatory caps was "a turkey" and the present bill was "son of turkey."

"I believe that this bill (Administration) has more to do with politics than with regulation," said Rep. Bill Alexander (D-ARK). "I believe that it would add to inflation through another layer of bureaucracy."

Under the Administration plan, said Rep. Thomas Luken (D-OHIO), the HEW Secretary "will have the hospitals of this nation in a vice-like grip."

Rep. Willis Gradison (R-OHIO) said the Administration plan penalized efficient hospitals and promoted "survival of the fattest." If the plan had been in effect in the past much of the life-saving technology and services of hospitals would have been stifled, he said.

Rep. Henry Waxman (D-CA), Chairman of the Commerce Health subcommittee, was a leader in the battle for the Administration bill. He told the House that the moderation in hospital costs was a result of the threat of price controls. There is no assurance the Voluntary Effort will be able to continue its success, he said. The Carter plan "is our chance to say to the American people we are willing to act to hold down the skyrocketing health care costs facing you," he said.

\* \* \* \*

The AMA has filed an appeal of the Federal Trade Commission's ruling of October 12, 1979, that the AMA *Principles of Medical Ethics* unlawfully restricts physician advertising.

The AMA's petition to the U. S. Court of Appeals for the Second Circuit, in New York City, contends that the order unlawfully interferes with the rights of medical societies, prohibiting them from disciplining members for overcharging patients, for example. The order would, furthermore, unduly restrict the ability of the AMA and other medical societies to try to curb false and deceptive promotional practices by physicians.

The AMA's appeal contends that the final

order went beyond the jurisdiction of the FTC and ignored the Association's efforts to "comply with evolving legal and social standards," concerning advertising by physicians.

The FTC in its order did concede that the AMA has a "unique and valuable" role to play in curbing false and misleading advertising.

The October 12 decision, which was made public October 24, revised an administrative law judge's November, 1978 ruling that would have barred the AMA from any regulation of advertising for two years and that would have required FTC approval for subsequent guidelines.

\* \* \* \*

Blue Cross-Blue Shield challenged a Federal Trade Commission staff study contending that physician influence over Blue Shield plans is "associated with significantly higher fees."

Blues President Walter McNerney said the FTC Bureau of Economics' methodology and results "are not supportable" and are "directly contrary" to the results of a Blue Shield analysis. "Even if the staff's attempt to extrapolate its findings rested on otherwise acceptable methodology, its failure to take account of essential characteristics of the reimbursement system which it analyzed caused the staff to over-state the possible effects of physician influence on Blue Shield plans and total health care costs," said McNerney.

The FTC Report said "our results . . . indicate that reimbursement rates are 16 percent higher where a local medical society or other organized group of physicians selects board members. Furthermore, if physicians, regardless of the method of their selection, comprise 50 percent or more of a Blue Shield board, reimbursement rates are, on average, 10 percent higher."

The Report, prepared by FTC economists David Kass and Paul Pautler, contains a disclaimer that it "has not been reviewed by, nor does it necessarily reflect the views of the Commission or any of its members."

Last May, FTC Bureau of Competition staff called for an open rule-making proceeding to prohibit physician organizations from participating in the control of Blue Shield Plans and to limit for five years individual physician participation to no more than 25 percent of a plan's governing body.

\* \* \* \*



State-by-state variations in Medicaid coverage have prompted the Administration to assign high priority to upgrading Medicaid and to move toward making benefits and eligibility uniform across the nation. Despite the estimated \$20 billion plus cost of Medicaid during the past fiscal year, serious gaps remain in financing health care services for the poor. One result has been that hospitals and physicians are providing more than \$1 billion a year in charity care.

The Administration, whose Medicaid reforms are embodied in its National Health Plan (NHI), has insisted that the Medicaid problem be recognized by the Senate Finance Committee during its mark-up of a Catastrophic National Health Insurance bill. Responding to the plea, the Committee tentatively has approved provisions insuring that the proposed \$3,500 "deductible" for out-of-pocket health care expenses be lowered depending upon income.

From 25 percent to 35 percent of the population with incomes below the poverty line—some nine million people—don't qualify for Medicaid. In some states more than 70 percent of the poor are not covered. The differing welfare programs in the states and the need for Medicaid to mesh with these had posed a giant headache. Federal matching Medicaid funds are only furnished for coverage of people who fit specific welfare categories.

There are large loopholes. For example, single adults and childless couples who are poor cannot receive Medicaid unless they are disabled or are more than 65 years old.

Income cutoffs for Medicaid eligibility vary greatly, from less than \$2,400 for a family of four in some southern states to \$4,800 or above in some northern tier states.

A significant problem is the discouragement to providers stemming from the Medicaid payment rates which average 20 to 25 percent lower than Medicare's rate, a bargain-basement rate, itself.

\* \* \* \*

The House had defeated legislation to extend coverage of the National Labor Relations Act to include interns and residents.

The medical profession was split over the question of whether residents should have the right to form labor unions under federal law.

Opposing the concept was the Association of American Medical Colleges because of the possi-

ble impact on hospitals affiliated with medical schools.

A principal supporter of the proposal was the AMA, whose House of Delegates took the position that the fact interns and residents "are in a learning process of acquiring new skills does not detract from their legal right to organize and engage in collective bargaining . . ."

\* \* \* \*

Rep. Al Ullman (D-ORE), Chairman of the Ways and Means Committee, has introduced in legislative form a new tax treatment proposal for private health insurance. Ullman is the first lawmaker to propose tightening tax breaks for private health insurance in order to encourage purchase of cheaper insurance, to spur Health Maintenance Organizations (HMOs), and to make health providers and consumers in general more cost-conscious. In a House speech, Ullman said his bill would bring in \$3 billion more in federal tax revenues in 1984. The Ullman Plan is expected to be the subject of Ways and Means hearings next year.

Ullman said his proposal would restructure the financing of the health care industry. "It encourages competition within the health industry to offer more economic policies," he said. "It would check and stabilize the rising proportion of the GNP spent on health. By modest estimates, the proposal will reduce health care spending by more than \$3 billion in 1984."

By concentrating on the health coverage package offered consumers, Ullman said his bill would force "the consumer, the doctor, the hospital, and the insurance company to consider the wide range of health benefits and their price tags—and then decide exactly how much health protection a worker wants for his dollar."

Ullman's legislation would limit the tax-free portion of the employer contribution to \$120-a-month for a family, and somewhat less for individuals. Such a limit, he said, will encourage employees to look for better buys, to get more for their \$120-a-month, and more carefully examine whether insurance for dental work, eye care, and prescription drugs is worth the extra expense.

Businesses would be required to offer a low-cost health plan with consumer cost-sharing or a HMO plan, in addition to a traditional full-benefit policy.

\* \* \* \*

Rep. Daniel Flood (D-PA), long-time head of the House Appropriations Subcommittee on Health, announced he will leave Congress for health reasons Jan. 31. The 76-year-old Congressman is facing a federal retrial on bribery charges.

Flood has contended the wrong-doing was carried out by an aide, already convicted, and that he is innocent.

Flood was an influential lawmaker in the health field, guiding the billions of dollars for health programs for many years.

He assumed the chairmanship of the key subcommittee at a time when the continued sharp escalation by Congress of health appropriations was coming to a close. Flood won respect for his handling of the money bills in more austere times. In general, he voted more funds for the Federal Health Budget than the Administration requested, but less than the Senate wanted.

\* \* \* \*

Rep. Tim Lee Carter (R-NY), Congress' foremost expert on health legislation, announced he will retire after the present Congressional session, his sixth term in Congress. The physician-lawmaker is ranking minority member on the House Commerce Subcommittee on Health.

Carter for many years teamed with former Subcommittee Chairman Paul Rogers (D-FLA) to help steer vital health measures through Congress. A staunch ally of the AMA on most of its positions, Carter was successful in moderating many bills before Congress and in blocking others from consideration. At the same time, he favored some important health legislation and worked for bipartisan support.

Shortly after announcing his retirement, the 69-year-old physician spoke on the House floor against the Administration's Hospital Cost Containment Bill, declaring it would force many hospitals into bankruptcy.

\* \* \* \*

## **REPORT OF AMA INTERIM CONVENTION**

**December 1979**

**Honolulu, Hawaii**

**By Purcell Smith, Senior Delegate**

This summary covers the more important matters considered during the 1979 Interim Meeting of the AMA House of Delegates, but it is not meant to be a complete report of all actions taken. The December 14, 1979, issue

of American Medical News carries more complete discussion of all House actions.

## **AWARDS**

Frank H. Mayfield, M.D., from Cincinnati, Ohio, will receive the 1980 Distinguished Service Award. Howard Hassard, General Counsel of the California Medical Association since 1945, will receive the Citation of a Layman for Distinguished Service. The awards will be presented at the 1980 Annual Meeting.

## **REPORT OF THE AMA PRESIDENT**

President Hoyt Gardner urged physicians to "do more to show and tell the public we care." He stated that "each of us must see himself or herself as the prime communicator of our profession in the one-to-one relationship with patients." He stressed the need for physician cooperation in "good works" with the AMA Auxiliary and for greater community activity. "Voluntary local initiative or involvement has to be forthcoming for needs as diverse as health care planning, environmental safety, discipline within our profession, and containment of health care costs," he said.

## **NATIONAL HEALTH INSURANCE**

AMA policy on National Health Insurance, following the principles of Resolution 62 of the 1978 Interim Meeting, was reaffirmed by the House of Delegates. This Resolution called on the Board of Trustees to sponsor, only if necessary, legislation to require minimum standards of adequate benefits for health insurance policies, with deductible and coinsurance; to include a system of uniform benefits provided by federal, state and local governments for those who cannot provide for their own medical care; to make catastrophic insurance coverage, with a deductible and coinsurance, available from the private insurance industry through a nation-wide program; and to provide for administration at the state level with national standardization through federal guidelines. In a related action, the House adopted a resolution stating that the AMA will "continue to advocated in a positive manner the superiority of a voluntary, free-choice method of medical and health care delivery compared to a system dominated and controlled by the federal government.

## **ETHICS**

No specific action was taken on the report of the Ad Hoc Committee on Principles of Medical



Ethics, with final action planned for the Annual Meeting in 1980, following receipt of information and suggestions from state and local specialty societies.

### MEMBERSHIP AND FINANCES

Membership was a dominating issue at the Interim Meeting of the House of Delegates. President Gardner called on all members to become active recruiters.

EVP James Sammons urged delegates to ask their local societies to reexamine their membership activities. The reference committee considering financial affairs reported that in the absence of substantial numbers of new members, expenses will exceed income in 1981. The committee added: "This House must now set itself to recruit new members with new resolve to minimize the amount of any dues increase that the Board of Trustees may be obliged to propose at the Annual Meeting in 1980."

A report by the Council on Long Range Planning and Development, urging support for membership programs now underway, was adopted by the House. The report points out that "a critical membership problem exists at all levels of the Federation, but particularly at the national level, which seriously threatens the future of organized medicine." The House commended the Board and the EVP for their fiscal leadership and called on the Board to "make every effort" to increase the membership.

In its report the Council on Long Range Planning and Development stressed that long-term strategies are needed to resolve the long-term membership problem and that the only feasible strategy involves reevaluation of the structure of the Federation. A related report from the council described models for changing the AMA's organizational structure and invited comment from state, county and specialty societies before a final report is submitted to the House at the 1980 Annual Meeting.

### MEDICAL EDUCATION

Medical Education will come under intensive review with an agenda of issues that ranges from admission to medical school and residence training to licensure and evaluation of physicians. In filing a report from the Council on Medical Education, the House said the concepts and principles of the report are to become "an agenda of issues for discussion, followed by the develop-

ment and review of more specific recommendations." A council report stated a need for the restructuring of the third and fourth years of medical school, creation of a "comprehensive residency" for all first-year residents, and establishment of a committee of "public and professional statesmen" to make policy recommendations to the council.

The House adopted a council report describing AMA activity in continuing medical education accreditation since the Association's withdrawal from the Liaison Committee on Continuing Medical Education last summer. The report pointed out that the new Committee on the Accreditation of CME has reviewed 34 applications and will review the standards and procedures for accreditation.

Another council report adopted by the House stresses the need for the AMA and all physicians to support continuing efforts to eliminate the deficit of minority physicians. The House also called for support of policies and legislation that will increase the number of physicians training for careers in biomedical research.



### ANSWER—Electrocardiogram of the Month

**DISCUSSION:** The ECG shows a sinus rhythm, low QRS voltage, and nonspecific ST-T changes. It is of interest that electrical alternans is present, most prominent in V1-V6. This trace shows 2:1 QRS alternans, but does not show total alternans with involvement of both atrial and ventricular complexes. QRS or ventricular alternans is said to be most frequently seen in pericardial effusion, significant myocardial disease, and tachycardia. Total alternans is most common in pericardial effusions with tamponade secondary to malignancy, lupus or tuberculosis. The trace does not meet commonly recognized criteria for RVH or LVH. Neither the clinical picture nor the ECG is consistent with acute pericarditis. Low QRS voltage is consistent with but certainly not diagnostic of pericardial effusion. The mechanism of electrical alternans is not known. Of the choices given 4. is the best one, but no information is given that would be pathognomonic of any of the proposed entities.

# keeping up

## Category 1 Continuing Medical Education Programs Available in Arkansas

### ACUTE RESPIRATORY FAILURE

Presented by Charles Hiller, M.D., *March 10-12, 8:00 a.m. to 4:00 p.m.* (each day), UAMS Campus, Education II Building, Room G-137. Sixteen hours Category I credit. Registration fee \$100.

### NEW THERAPY FOR HYPERTENSION

Presented by Watson Arnold, M.D., *March 21, 12:00 noon to 7:00 p.m.* and *March 22nd, 8:30 a.m. to 4:00 p.m.*, UAMS Campus, Education II Building, Room G-141 A&B. Nine hours Category I credit. Registration fee \$50.

### SMALL COMPUTERS IN THE PHYSICIAN'S OFFICE

Presented by Gloria Lane and Dr. Howard Barnhard, *March 29th, 8:30 a.m. to 4:00 p.m.*, UAMS Campus, Education II Building, Room G-137. Six hours Category I credit. Registration fee \$35.

### NEONATAL SEMINAR

Presented by Alice Beard, M.D., *March 14th, 8:30 a.m. to 4:30 p.m.*, UAMS Campus, Education II Building, Room G-141 A&B. Six hours Category I credit. Registration fee \$35.

### ENDOMETRIOSIS: CURRENT CONCEPTS IN MANAGEMENT

Presented by W. Paul Dmowski, M.D., Ph.D., Department of Obstetrics and Gynecology, University of Arkansas College of Medicine, *April 4th, 7:30 a.m. to 4:30 p.m.*, Camelot Inn, Little Rock. Six hours Category I credit. Registration fee \$50.

### ENT — OPHTHALMOLOGY

Presented by Ben N. Saltzman, M.D., *April 12th, 8:30 a.m. to 5:00 p.m.*, UAMS Campus, Education II Building, Room G-141 A&B. Six and one-half hours Category I credit. Registration fee \$35.

### RECURRING EDUCATION PROGRAMS

Unless otherwise indicated, programs are for one to one and one-half hours Category 1 credit.

#### FAYETTEVILLE — AHEC-NW

*Medicine — Family Practice Teaching Conference*, 7:30 a.m. each Saturday, Washington Regional Medical Center.

#### FAYETTEVILLE — VA MEDICAL CENTER

*Radiology Conference*, March 4th and 19th and April 1st and 16th, 1:00 p.m., Conference Room.

*Pathology Conference*, March 11th, 1:30 p.m., and April 15th, 3:00 p.m., Conference Room.

*Mortality Conference*, March 13th and April 10th, 3:00 p.m., Conference Room.

*Pulmonary Conference*, March (check for date and time).

*Renal Conference*, April (check for date and time).

#### HOT SPRINGS — ST. JOSEPH'S MERCY MEDICAL CENTER

*Arkansas Health Department Regional Chest Conference*, second and fourth Tuesday.

#### LITTLE ROCK — BAPTIST MEDICAL CENTER

*Pulmonary Care Conference*, each Tuesday, 12:00 noon to 1:00 p.m., Dining Room #4.

*Central Arkansas Primary Care Conference*, second Tuesday, 7:00 p.m. to 9:00 p.m., Auditorium. Two hours Category I credit.

*Cardiopulmonary Resuscitation Course*, second Wednesday, 6:00 p.m. to 12:00 p.m., Human Resource Development Area. Six hours Category I credit.

*Morbidity and Mortality Conference*, first Thursday, 8:00 a.m. to 9:00 a.m., Conference Room #1.

*Surgery Conference*, each Thursday except first Thursday, 8:00 a.m. to 9:00 a.m., Conference Room #1.

#### LITTLE ROCK — ST. VINCENT INFIRMARY

*Interhospital GI Problems Conference*, first Monday, 6:00 p.m. to 7:30 p.m., Room E155, Education Wing.

*Peripheral Vascular Disease Conference*, second Monday, 6:00 p.m. to 7:00 p.m., Room E155, Education Wing.

*Interhospital Urology Grand Rounds*, first Tuesday, 5:30 to 6:30 p.m., Room E159, Education Wing.

*Neuropathology Conference*, third Tuesday, 5:00 p.m. to 6:00 p.m., Room S1169, Laboratory.

*Pulmonary Conference*, first and third Thursday, 12:00 noon to 1:00 p.m., Room #159, Education Wing.

*Cleft Palate Conference*, April 16th, 12:30 p.m. to 1:30 p.m., Room E159, Education Wing.

#### LITTLE ROCK — UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES

*Internal Medicine Grand Rounds*, each Thursday, 8:00 a.m. to 9:00 a.m., Education I Auditorium.

#### TEXARKANA — ST. MICHAEL HOSPITAL

*Tumor Conference*, first Wednesday, 7:00 a.m. Sponsored by AHEC-SW.

*Chest Conference*, third Wednesday, 12:30 p.m. Sponsored by AHEC-SW.

As organizations accredited for continuing medical education by the Liaison Committee on Continuing Medical Education, the organizations named certify that these continuing medical education activities meet the criteria for the credit hours specified in Category I of the Physician's Recognition Award of the American Medical Association.





## PERSONAL AND NEWS ITEMS

### **Dr. Roy Presents Course**

Dr. F. Hampton Roy of Little Rock presented a course on intracular lens implantation in Mar Del Plata on November 1979 at the XI Argentine Congress of Ophthalmology. Dr. Roy also presented two papers on intracular lens implantation at the XI Chilean Congress of Ophthalmology in Concepcion, Chile, in December.

### **Physician Locates**

Dr. David C. Garrett of Russellville has begun family practice at Rogers.

### **Dr. Dunn Receives Fellowship**

Dr. Donald L. Dunn of Russellville has been elected to the Fellowship of the American College of Obstetrics and Gynecologists.

### **Dr. Eddington Re-elected Chief of Staff**

Dr. William R. Eddington of Jonesboro was re-elected chief of staff at the St. Bernard's Regional Medical Center. Other officers elected for the coming year are: Dr. R. G. Burns, vice chief of staff; Dr. W. T. Rainwater, secretary; Dr. William Robert Green and Dr. James W. Sanders, members at large on the executive committee; Dr. J. W. Basinger, chief of obstetrical services; Dr. Glenn E. Dickson, chief of surgery; and Dr. J. H. Stallings, chief of medicine.

### **Dr. Weiss Honored**

Dr. John B. Weiss of Little Rock has been named a Fellow of the American College of Cardiology.

### **Physician Receives Fellowship**

Dr. J. L. Stinnett, Jr., of Searcy has been elected to the Fellowship in the American Academy of Pediatrics.

### **Physicians Receive Fellowships**

Dr. Charles H. Miller of Fayetteville, Dr. A. J. Thompson and Dr. John B. Weiss, both of Little Rock, were conferred with Fellowship status in the American College of Chest Physicians during the group's annual meeting in November in Houston.

### **Dr. Downs Named New Chief of Staff**

Dr. Ralph A. Downs, Jr., has been named chief of staff of St. Vincent Infirmary, succeeding Dr. Harold Hedges. Dr. Downs practices Urology in Little Rock.

### **Physician Receives Fellowship in AAFP**

Dr. Rodney L. Griffin of Magnolia has been named a Fellow of the American Academy of Family Physicians.

### **Pulaski County Elects Officers**

The Pulaski County Medical Society elected the following officers for 1980: Dr. Julian L. Foster, president; Dr. Charles W. Logan, president-elect; Dr. W. Ray Jouett, vice president; Dr. Kelsy J. Caplinger, secretary; Dr. Harold D. Purdy, treasurer; and Dr. Warren M. Douglas, treasurer-elect.

### **Dr. DeClerk New Chief of Staff**

Dr. Thomas B. DeClerk has been elected chief of staff at the Randolph County Memorial Hospital. Dr. Danny B. Holt was elected as secretary-treasurer and chief of staff-elect.

Dr. Hal S. Barre is the out-going chief of staff.

### **Physician Named Fellow**

Dr. William F. Hayden of Little Rock has been named a Fellow of the International College of Surgeons.



## Announcement

### DR. JANSEN APPOINTED ASSISTANT SECRETARY-TREASURER OF ACADEMY

CHICAGO—G. Thomas Jansen, M.D., Professor and Chairman, Department of Dermatology, University of Arkansas School of Medicine, was appointed Assistant Secretary-Treasurer of the American Academy of Dermatology. The appointment was made during the 38th Annual Meeting of the Academy in Chicago, December 1-6.

Dr. Jansen has a private practice in Little Rock, AR. He also is Chief, Department of Dermatology, Little Rock Consolidated VA Hospital.

Dr. Jansen was a member of the Academy's Board of Directors (1969-73), Finance Committee (1969-74), and Committee on the Scientific Assembly (1976-77). He also was editor of the *Bulletin of the American Academy of Dermatology*.

Dr. Jansen has held a number of offices in other professional associations. He was President of the

Southern Medical Association from 1976 to 1977. In 1964, he was President of the Arkansas Dermatological Society. He was on the Board of Directors for the Society for Investigative Dermatology from 1969 to 1973 and on the Board of the American College of Chemosurgery from 1969 to 1972. He later became Vice-President of the College of Chemosurgery in 1975.

Currently, Dr. Jansen serves as President of the Dermatology Foundation. From 1973 to 1975 he was President of the South-Central Dermatologic Society. He was on the American Board of Dermatology in 1977. He served as chairman of the Central Arkansas Health Planning Council from 1970 to 1972.

Dr. Jansen went to medical school at the University of Wisconsin after graduating from Marquette University in Milwaukee, WI. He completed his dermatology residency at the University of Michigan School of Medicine.

The American Academy of Dermatology is the professional association for over 95 percent of the physicians specializing in the education, practice and management of diseases of the skin.



## THINGS TO COME



### APRIL 1980

The Annual Session of the Arkansas Medical Society will be held April 20-23, 1980, at the Arlington Hotel in Hot Springs. This year's program theme will be "Recent Advances in Oncology."

### JULY 1980

A postgraduate course on Contemporary Clinical Neurology will be sponsored July 22-26, 1980, by the Vanderbilt University in Nashville, Tennessee. This course is accredited for 16 hours, Category I, Physicians Recognition Award, American Medical Association.

For more information and registration, contact: Vanderbilt Continuing Medical Education, 3200 West End, Suite 306, Nashville, Tennessee 37203, or phone (605) 322-2716.

### AUGUST 1980

M. D. Anderson Hospital and Tumor Institute will hold its Fifth Annual Urologic Oncology Seminar August 21 through 23, 1980, at the Shamrock Hilton Hotel in Houston.

This program meets the criteria for 18 credit hours in Category I of the Physicians Recognition Award of the American Medical Association. The fee is \$125.00.

For additional information write: Douglas E. Johnson, M.D., Head, Department of Urology and Professor of Urology, M. D. Anderson Hospital, 6723 Bertner, Houston, Texas 77030.

\* \* \* \*

### Immunology Seminar

#### DATE:

March 24-26, 1980 (Monday through Wednesday)

#### TITLE:

Immunology for the Practicing Physician

#### LOCATION:

The University of Texas Health Science Center at Dallas

#### DESCRIPTION:

A comprehensive review of immunology for the



## THINGS TO COME

physician in clinical practice that will include 3 seminars:

- 1) A review of the cellular basis for the immune response with special emphasis on newer concepts of immunoregulation
- 2) The immunological function of the various organs interfacing with the environment, such as the skin, lung, and gastrointestinal tract

- 3) The role of complement activation in the pathogenesis of various diseases

### CREDIT:

22 hours in Category I, AMA or LCCME

### CONTACT:

Division of Continuing Education, The University of Texas Health Science Center at Dallas, 5323 Harry Hines Blvd., Dallas, TX 75235, phone 214/688-2166



## NEW MEMBERS

### Dr. Kanaka Vasudevan

Dr. Vasudevan was born in Srirangam, India, and is a new member of the Phillips County Medical Society. Dr. Vasudevan attended Deshbandhu College in Kalkaji, New Delhi. She was graduated in 1967 from Lady Harding Medical College and Hospital for Women and Children in New Delhi. Dr. Vasudevan interned at Lady Harding Medical College and took residency training at Boston University Medical Center and Saint Elizabeth's Hospital.

Dr. Vasudevan is director of Anesthesiology at the Helena Hospital. She is board certified in Anesthesiology and is a member of the American Society of Anesthesiologists and the Internal Anesthesia Research Society.

Dr. Vasudevan's office is located at 633 Oakland Avenue in Helena.

### Dr. Steven E. Harms

Dr. Harms, a native of Russellville, is a new courtesy member of the Pulaski County Medical Society. Dr. Harms was graduated in 1978 from the University of Arkansas College of Medicine. He is a Radiology resident at the University Medical Center.

The Sebastian County Medical Society has added two active members to its roll. They are:

### Dr. Richard A. Hinkle, Jr.

Dr. Hinkle is a native of Conway and was graduated from Hendrix College with a B.A. degree in 1971. He received his M.D. degree in 1975 from the University of Arkansas School of Medicine in Little Rock. Dr. Hinkle received his internship and residency training at the Baylor College of Medicine in Houston, Texas, specializing in Internal Medicine.

Dr. Hinkle is board certified in Internal Medicine. He is a member of the American College of Physicians.

Dr. Hinkle is located at 314 North Greenwood in Fort Smith.

### Dr. Adrian L. Herren

Dr. Herren was born in Palestine, Texas, and was graduated from Baylor University in Waco, Texas, in 1969 with a B.A. degree. He was graduated from the University of Texas Southwestern Medical School in Dallas in 1973. Dr. Herren interned at St. John's Hospital in Tulsa, Oklahoma.

Dr. Herren served in the United States Navy as General Medical Officer from July 1974 to June 1975. From 1975 to 1977, he was in residency training in Anesthesiology at the Naval Regional Medical Center in San Diego. From July 1977 to 1979, Dr. Herren served as an Anesthesiologist with the Navy at San Diego. Dr. Herren was clinical instructor at the University of California in San Diego. He is a member of the American Society of Anesthesiology and the American Society of Regional Anesthesia.

Dr. Herren is located at 216-A North Green-

## NEW MEMBERS

wood in Fort Smith, specializing in Anesthesiology.

\* \* \* \*

White County has announced the addition of one new member to its membership roll:

### **Dr. Michael W. Bridges**

Dr. Bridges is a native of Arkansas and was graduated from Henderson State University in 1974 with a B.S. degree. His M.D. degree was received in 1978 from the University of Arkansas School of Medicine in Little Rock. Dr. Bridges internship was at St. Vincent's Infirmary in Little Rock.

Dr. Bridges is in general practice located at the Bald Knob Medical Center in Bald Knob.

\* \* \* \*

The Benton County Medical Society has added two active members to its roll. They are:

### **Dr. Gene B. Waldon**

Dr. Waldon was born in Arkadelphia and attended the Arkansas Tech University. He received his M.D. degree in 1975 from the University of Arkansas School of Medicine in Little Rock. Dr. Waldon took his internship and residency training at the Veterans Administration Hospital in Little Rock.

In 1978 to 1979, Dr. Waldon was assistant professor of medicine at the University of Arkansas School of Medicine.

Dr. Waldon is board certified in internal medicine. He is associated with the Rogers Diagnostic Clinic at 1019 West Cypress in Rogers.

### **Dr. Wallace A. Rolniak**

Dr. Rolniak was born in San Diego, California, and was graduated from the University of Arkansas in Fayetteville in 1969 with a B.A. degree. He received his M.D. degree in 1973 from the University of Arkansas School of Medicine. Dr. Rolniak interned at the Navy Regional Medical Center in Oakland, California, and was in residency training at the Navy Regional Medical Center and at Gorgas Memorial Laboratory, Republic of Panama.

Dr. Rolniak is certified by the American Board of Internal Medicine. He is an Associate Member of the College of Physicians.

Dr. Rolniak is associated with the Rogers Diagnostic Clinic at 1019 West Cypress Street in Rogers.

The Craighead-Poinsett County Medical Society has added one new active member to its roll:

### **Dr. Fred J. George**

Dr. George is a native of Blytheville and received his B.S. degree from Memphis State University in Memphis in 1971. He was graduated from the University of Arkansas School of Medicine in Little Rock in 1974. Dr. George interned at the Methodist Hospital in Memphis and took residency training in Ophthalmology at the University of Arkansas School of Medicine in Little Rock.

Dr. George was certified by the American Board of Ophthalmology in May 1979.

Dr. George is located at 505 East Matthews in Jonesboro, specializing in Ophthalmology.

\* \* \* \*

Washington County has added one new active member to its roll:

### **Dr. Harold A. Decker**

Dr. Decker was born in Salt Lake City, Utah, and was graduated from the University of Utah in Salt Lake City in 1953 with a B.S. degree. He received his M.D. degree in 1957 from the University of Utah College of Medicine in Salt Lake City. Dr. Decker interned at the Veterans Administration Hospital in Oklahoma City, Oklahoma, and took residency training at the University of Oklahoma Medical Center in Oklahoma City and at the University of Utah Medical Center in Salt Lake City.

Dr. Decker served with the United States Health Service from 1960 to 1962, and was assigned to the Ohio Department of Health. He remained with the Ohio Department of Public Health until 1964. Dr. Decker was Clinical Instructor at the Ohio State University College of Medicine from 1960 to 1964. From 1964 to 1969, he was Assistant Professor at the University of Michigan School of Public Health and from 1970 to 1979, he was Associate Professor at the University of Arkansas School of Medicine in Little Rock.

Dr. Decker is certified by the American Board of Pediatrics. He is a member of the American Academy of Pediatrics and the Ambulatory Pediatric Association.

Dr. Decker is specializing in Pediatrics at the Fayetteville Pediatric Clinic, 207 East Dickson Street in Fayetteville.



## RESOLUTIONS



### Dr. E. A. Mendelsohn

WHEREAS, God in His infinite mercy has seen fit to call from our midst Dr. E. A. Mendelsohn, and

WHEREAS, Dr. Mendelsohn has faithfully served his patients in the community at large throughout his entire medical career, and

WHEREAS, Dr. Mendelsohn during his years of practice has reflected the highest ideals of his profession, and

WHEREAS, in his devotion to family, church and friends, he exemplified the best in man, and

WHEREAS, the Sebastian County Medical Society mourns his loss,

THEREFORE, BE IT RESOLVED by the Sebastian County Medical Society, in its regular meeting on January 8, 1980, hereby adopts these Resolutions and directs that a copy be spread on the Minutes of the Society and that a copy be furnished the family and that a copy be published in the Journal of the Arkansas Medical Society.

Signed:

Charles W. Bailey, M.D.,  
President,  
Sebastian County Medical Society



## OBITUARY

### Dr. E. A. Mendelsohn

Dr. Ernest A. Mendelsohn of Fort Smith died December 24, 1979. He was born January 14, 1912. Dr. Mendelsohn had been a radiologist at Holt Krock Clinic.

Dr. Mendelsohn attended the Humboldt High School and College in Berlin, Germany, and was graduated from the Medical School of the University of Berlin in Germany in 1936. He was a member of the United Hebrew Temple.

Dr. Mendelsohn is survived by his wife, Ursula Mendelsohn, three daughters and one son.

### Dr. R. O. Norris

Dr. R. O. Norris of Tuckerman died December 30, 1979. He was 94 years of age.

Dr. Norris was born in Poughkeepsie and moved to Tuckerman to practice medicine in 1919. He practiced medicine in northeast Arkansas for 61 years and was one of the original owners of radio station KRLW in Walnut Ridge.

Dr. Norris is survived by one grandson and two granddaughters.



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SCIENTIFIC ARTICLES

Shared Responsibility For Sport Safety	381
<i>K. S. Clark, Ph.D.</i>	
What's New — And Useful — In Urology	383
<i>Norman E. Peterson, M.D.</i>	
Trigger Finger	388
<i>Richard J. Nasca, M.D.</i>	
Grand Rounds: "Sleep Apnea Syndrome"	391
<i>F. Charles Hiller, M.D., E. A. Lucas, Ph.D., J. R. Phillips, M.D., and M. D. Wewers, M.D.</i>	

FEATURES

Office Orthopaedics: "Fracture Healing"	399
<i>Philip H. Johnson, M.D.</i>	
ECG of the Month	403
<i>John W. Watson, M.D.</i>	
Public Health at a Glance: "The Controlled Substances Act: Physician Alert!"	404
<i>Don Phillips, R.Ph., M.P.A.</i>	
Pediatric Review: "Improved Survival With Aggressive Treatment of Neonatal Jaundice"	405
<i>Dick Stevenson, M.D., E. S. Golladay, M.D., and Donna Nash, R.N.</i>	
Editorial: "Monoclonal Gammopathies"	412
<i>Alfred Kahn, Jr., M.D.</i>	
Obituaries	413
Keeping Up	414
Personal and News Items	415
Things to Come	416
Resolutions	417
Proceedings of Societies	417
New Members	418
Convention Program Section	421

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# Shared Responsibility for Sport Safety

## A Statement of the NCAA Committee on Competitive Safeguards and Medical Aspects of Sports\*

K. S. Clark, Ph.D., Past Chairman

Participation in sport requires an acceptance of risk of injury. Athletes rightfully assume that those who are responsible for the conduct of sport have taken reasonable precautions to minimize the risk of significant injury. Periodic analysis of injury patterns continuously leads to refinements in the rules and/or other safety guidelines. However, to legislate safety via the rule book and equipment standards, while often necessary, is seldom effective in and by itself. To rely on officials to enforce compliance with the rule book is as insufficient as to rely on warning labels to produce behavioral compliance with safety guidelines. By compliance is meant respect on the part of everyone for the intent and purpose of a rule or guideline, not merely technical satisfaction by some of its phrasing.

Some sport safety problems lend themselves readily to identification and solution (e.g., heat stroke and the administration of liquid freely during early football practice). Some safety problems may be less clearly identified (e.g., head injuries), and solutions may be developed on selected assumptions and the premise that measurable standards are better understood than qualitative rhetoric (e.g., purchase of a helmet manufactured in accordance with NOCSAE standards instead of purchase of the "best helmet possible"). Some safety problems remain problems because of questionable compliance with the legislated solutions (e.g., dental mouthguards).

Using football head/neck injury prevention as an illustration with current significance, it is impossible and should be unnecessary to expect the game officials to examine each helmet of the

squad before the game to ensure that each helmet has met the NOCSAE standard. Respect for the approved safety standard alone should ensure that nothing but NOCSAE helmets are available to be worn. Optimal effectiveness, moreover, will come only from the athletes' informed compliance with all basic principles of head/neck injury prevention. The committee therefore encourages football coaches to discuss the following information with their squad at the onset of the season, put it on each player's locker for emphasis, and then remind them of the essentials periodically during the season:

1. Serious head and neck injuries, leading to death, permanent brain damage, or quadriplegia (extensive paralysis from injury to the spinal cord at the neck level), occur each year in football. The toll is relatively small (less than one fatality for every 100,000 players, and an estimated two to three non-fatal severe brain and spinal cord injuries for every 100,000 players), but persistent. They cannot be completely prevented due to the tremendous forces occasionally encountered in football collisions, but they can be minimized by manufacturer, coach and player compliance with accepted safety standards.

2. The NOCSAE seal on a helmet indicates that a manufacturer has complied with the best available engineering standards for head protection. By keeping a proper fit, by not modifying its design, and by reporting to the coach or equipment manager any need for its maintenance, the athlete is also complying with the purpose of the NOCSAE standard.

3. The rules against intentional butting, ramming, or spearing the opponent with the helmeted head are there to protect the helmeted person

\*Via James A. Arnold, M.D., Committee Member, P. O. Box 1608, Fayetteville, Arkansas 72701.



much more than the opponent being hit. The athlete who does not comply with these rules is the candidate for catastrophic injury. For example, no helmet can offer protection to the neck, and quadriplegia now occurs more frequently than brain damage. The typical scenario of this catastrophic injury in football is the lowering of one's head while making a tackle. The momentum of the body tries to bend the neck after the helmeted head is stopped by the impact, and the cervical spine cannot be "splinted" as well by the neck's muscles with the head lowered as with the preferred "face up, eyes forward, neck bulled" position. When the force at impact is sufficient, the vertebrae in the neck can dislocate or break, cause damage to the spinal cord they had been protecting, and thereby produce permanent loss of motor and sensory function below the level of injury.

4. Because of the impact forces in football, even the "face up" position is no guarantee against head or neck injury. Further, the *intent*

to make contact "face up" is no guarantee that the position can be maintained at the moment of impact. Consequently, the teaching of blocking/tackling techniques which keep the helmeted head from receiving the brunt of the impact are now required by rule and coaching ethics, and coaching techniques which help athletes maintain or regain the "face up" position during the milieu of a play must be respected by the athletes.

\* \* \* \*

The above illustration covers only one significant safety problem in one sport. Other sports and other concerns within football can be similarly approached. Coaches should acquaint the athlete appropriately with the risks of injury and the rules and practices they are employing to minimize his/her risk of significant injury while pursuing the many benefits of sport. The athlete and the athletic program have a mutual need for an informed awareness of the risks being accepted and for sharing the responsibility for controlling that risk.



# What's New—And Useful—In Urology\*\*

Norman E. Peterson, M.D.\*

The benefits and refinements to be derived from medical progress and evolution are often delayed or withheld from the general domain for no other reason than simple lack of awareness of their existence or significance. A periodic effort to publicize useful and practical developments beyond the specialty sphere should be accepted as the responsibility of anyone qualified to do so, and applies particularly to the more esoteric surgical sub-specialties. The following discussion will focus upon what may be considered new and useful developments in Urology.

## GENITOURINARY MALIGNANCIES

Although exceptions are encountered, *kidney tumors* (1% of all malignancies) remain essentially radio-resistant and insensitive to current conventional chemotherapy, a fact that is particularly regrettable with the experience of metastatic dissemination encountered at presentation in up to 33% of all such patients. More optimistically, otherwise difficult and dangerous nephrectomy attendant upon hemorrhage from tumor neovascularity has been rendered safe and virtually bloodless through the technique of deliberate pre-operative selective renal artery embolization, employing any of several embolic particles. In addition, this technique has been employed in an effort to induce immuno-stimulation in disseminated disease by merely delaying nephrectomy for seven days or more, with anecdotal and poorly-controlled successes reported. Temporary fever and flank pain is easily controllable.

*Wilm's tumor* (nephroblastoma: 5.5% of all pediatric tumors) has advanced from a virtually hopeless prognosis in the 1940's to one of guarded optimism currently, with progress owing to chemotherapeutic advances, improved diagnostic methods, and restricted indications for radiotherapy. National Wilm's Tumor Study data have elucidated several features portending a graver prognosis, including age of diagnosis exceeding 24 months, size of lesion exceeding 250 gm, sarcomatous or anaplastic histology (nuclear enlargement, hyperchromasia, atypical mitotic figures, absent or sparse tubules and glomeruli),

regional lymphatic deposits, and prior single-drug chemotherapy. Features found to be without influence include capsular penetration, vascular penetration or renal vein tumor thrombus, operative tumor spillage, and sex or race. Other data derived from the study include: (1) the benefit of combination chemotherapy (actinomycin D, vincristine) over single drug therapy regardless of other factors; (2) the acceptable omission of postoperative radiotherapy without diminished survival in patients under age 2 without tumor extension; (3) the advantage of combination chemotherapy (over single-drug chemotherapy) added to radiotherapy for cases demonstrating abdominal tumor extension; (4) the pessimistic prognosis associated with tumor anaplasia (10-12% of all patients, usually over age 2), carrying a 60% 2 year mortality, while absence of these features are not as prognostic, but suggest a 2 year mortality of 7%; (5) reduction in the relapse rate by 40% following combination chemotherapy despite negative factors not including tumor anaplasia; (6) a 2.7% relapse rate when factors are favorable; and (7) an overall 90% favorable prognosis for the 40% of the tumor population with nonmetastatic disease receiving combination chemotherapy.

An appreciation of these data has allowed the development of a rational classification of clinical staging, with therapy thereby recommended. Children with a more favorable prognosis may thus be exempted from potentially harmful adjunctive therapy.

Prognosis in the management of *bladder cancer* has again pivoted upon improved prognostic indicators and a better understanding of therapeutic responses. A correlation between the presence of blood group antigens on the cellular surface of low grade/superficial stage bladder tumors, and subsequent tumor invasion, has been verified. Specifically, loss of such antigens implies a strong likelihood of subsequent invasion, and conversely, so that lesions otherwise managed conservatively may now warrant closer followup or earlier radical extirpation. Similarly, the presence of cellular atypia or carcinoma-in-situ in random biopsies obtained at biopsy or resection of a gross bladder tumor — or subsequently, or from the grossly uninvolved bladder of a

\*Chief, Division of Urology, Department of Surgery, Denver General Hospital, and Associate Professor, Surgery/Urology, University of Colorado Medical Center, Colorado General Hospital.

\*\*Presented at the Annual Meeting of the Arkansas Medical Society, April 22-25, 1979, Little Rock, Arkansas.



symptomatic patient — is associated with recurrence and/or invasion in up to 80% of cases, and therefore implies the need for rigid close followup or radical surgical intervention. At least two reports tend to document the contributions to survival and curability by pelvic lymphadenectomy at the time of radical nephrectomy. In addition, pre-operative radiotherapy, in doses eliminating or minimizing extravesical radiation damage (1000-1500 rad), has increased survival rates significantly in higher stage lesion in which stage reduction is accomplished. Published 5 year surgical figures of 55-80% apply to radiation-induced downstaging in stage B<sub>2</sub> or C lesions, while absence of such downstaging is associated with 0-22% survival. Radiation-induced eradication of tumor in the surgical specimen has produced a 54% 5 year survival, contrasting with a figure of 25% in cases with residual disease at cystectomy. Such therapy has nonetheless been attended by a 10% increase in extrapelvic deposits, and efforts to limit dissemination are suspected to ultimately require routine chemotherapy at diagnosis and thereafter.

Recent advancements in *prostatic cancer* have rendered much of the traditional data and therapy obsolete, while providing several new insights which may require considerable time and case material for verification. These include the realization that clinical staging is inferior to, and unreliable in comparison with, pathologic staging. The latter requires pelvic lymphadenectomy which, if positive, represents stage D disease, and therefore contraindicates surgical intervention. Furthermore, reliable correlations exist between the type and degree of prostatic involvement (by biopsy) and the likelihood of lymphatic deposits. Important additional staging maneuvers include improved assays for prostatic acid phosphatase, and isotope bone scanning. Positive results from either of these studies, particularly when correlated with a high grade or diffuse prostatic pathology, implies a likelihood of dissemination, tending to mitigate against unnecessary lymphadenectomy or other intervention. Non-operative therapy may include intraprostatic placement of radioactive gold or iodine seeds with or without additional external radiotherapy limited to the prostate, or including the pelvis containing documented nodal deposits. Promising results with chemotherapy await confirmation. Endocrine abla-

tion/manipulation is now reserved as a palliative measure, and the risks of cardiovascular complications are reduced thereby, as well as by the documented benefit of much smaller dosages of maintenance estrogen (3 mg/day) than previously employed.

Improvement in the results of management of *testis cancer* (2% of all tumors; 60% of tumors in males age 25-44; commonest tumor in males age 29-35) reflect improved staging methods and profoundly improved chemotherapy, of significance to the fact of lymphatic or metastatic dissemination at presentation in 35% of all patients. Foremost has been the correlation of the presence of testis tumor with positive titres of serum factors originating in the tumor cells, specifically: (1) beta subunit of human chorionic gonadotropin; and (2) alpha fetoprotein. Either or both are present in over 90% of non-seminomatous testis tumors, with no false positive results yet encountered, and documentation may signal the presence of metastatic disease (after orchiectomy), recurrence (after initial successful therapy), or residual disease. Elevation of either factor after orchiectomy and before definitive therapy, regardless of clinical staging, has been associated with a 70% incidence of subsequent recurrence, contrasting with a 7% figure without "marker" demonstration. A further adjunct relates to the failure of alpha fetoprotein production by seminoma, thereby recommending further study and additional non-radiotherapeutic management of such patients demonstrating this marker, significant to the demonstration of non-seminomatous metastasis in 33% of all seminoma patients dying of disseminated disease.

Therapeutic experience has rendered radiotherapy ineffective and often harmful in all but terminally palliative circumstances. Selective cyclical chemotherapy for disseminated disease, coupled with appropriate surgical lymphadenectomy, has produced 5 year survivals as high as 93%. Seminoma remain best treated by radiotherapy alone, with cure rates exceeding 90-95% (55% in metastatic disease). Such figures are obtained with much smaller doses than previously employed, now approximately 3000 rad. The statistically pessimistic prognosis attached to Stage III seminoma may improve considerably with adjunctive radiomimetic chemotherapy. Spermatocytic seminoma, traditionally affecting older patients, has been noted to disseminate

with such rarity that orchiectomy alone is now the recommended management.

### TRAUMA

Evolving concepts in *renal trauma* include the diagnostic reliability of urography in comparison with other modalities, particularly when modified by high dose and tomographic techniques. Arteriography and isotope scanning are dilatory and usually add little to urographic data; arteriography in acute trauma may be limited to severe persistent hemorrhage or urographic non-function, while nuclear scanning is best limited to documentation of renal flow in suspected pedicle injury or to serial evaluation for progress of convalescence. Urographic function, regardless of compromise, reflects a less-than-major injury, while non-function suggests, until disproved by further studies or surgical exploration, either parenchymal shattering or pedicle interruption, both major degree injuries. These latter are differentiated by the degree of bleeding (urine, retroperitoneum): severe with a shattered kidney, slight with pedicle damage. Parenchymal fracture or urinary extravasation are no longer unequivocal indicators for surgical intervention, and typically respond favorably to non-operative management. Delayed traumatic hemorrhage reflects a serious injury and requires arteriographic assessment or surgical repair. Deliberate selective renal embolization has emerged as a reliable non-operative method for controlling renal arterial branch hemorrhage.

Significant *ureteral* defects previously requiring nephrectomy may now be approximated by any of several surgical maneuvers, including kidney mobilization, bladder mobilization, bladder tubulation, anastomosis to the opposite ureter, autotransplantation of the kidney, and synthetic grafting.

Extra peritoneal *bladder* damage is often amenable to simple catheter drainage for 7-10 days without sequelae. Bladder replacement with bovine pericardium and synthetic material has proved successful in animal and limited human trials.

Proximal *urethral* traumatic damage, traditionally calamitous from the standpoint of stricture formation, impotence, incontinence, and the need for multiple surgical corrective attempts, has yielded somewhat to adjuncts including symphyseal resection, direct-vision endoscopic in-

cision of the stricture, collagenolytic steroid injection, and autologous tube and patch grafting.

*Incontinence* and *impotence* are synthetically reversible in many cases by the surgical implantation of tissue-inert prostheses designed to provide the mechanical support necessary to restore these functions. Favored devices employ hydraulic systems which are manually alterable to allow volitional control, and refinements have produced progressively favorable results. In addition, permanently rigid implants are also available for correction of impotency. Revascularization techniques initiated in Europe and recently explored in the United States involve microsurgical anastomoses between inferior epigastric and dorsal penile arteries, and are intended to restore blood flow to corporal structures rendered ischemic by small vessel obstruction. These efforts have yielded success rates worthy of further pursuit.

### NEUROGENIC DYSFUNCTION

Neurogenic dysfunction of the lower urinary tract remains a common and complicated problem in which the traditional surgical approaches remain virtually unchanged from previous years, while indications for their employment are diminishing in favor of less radical surgery and, increasingly, pharmacologic manipulation by neuroactive drugs. This latter adjunct has attended the demonstration of contrasting adrenergic neuroreceptors in the smooth muscle of the bladder and bladder outlet, thereby permitting the attempted pharmacologic stimulation or suppression of these areas accordingly to restore voiding normalcy. Drug suppression of striated external urethral sphincter activity is also possible. Drug combinations frequently improve the results of single agents. In addition, surgical ablation of the external urethral sphincter and/or intermittent urethral self-catherization have rescued innumerable patients from otherwise inevitable suprapubic urinary diversion. Technology for measuring urodynamic functions is now available to provide interpretable diagnostic data in cases often previously managed empirically.

### INFECTION

The attention devoted to *pediatric vesico-ureteral reflux* over the past three decades has provided a progressively enlightened understanding of the significance of varying degrees of re-



flux in various settings, and resulted in a steady decline in indications for corrective surgery. These indications may now best be described as limited to: (1) ongoing or recurrent pyelonephritis despite suppressive antibiotic therapy; (2) antibiotic non-compliance, and/or, (3) factors suggesting little likelihood of spontaneous regression, such as high grade or low pressure reflux, or co-existing anatomic defects (e.g., bladder obstruction by valves or stricture, bladder diverticula, ectopic orifices, etc.). A previous policy demanding surgical correction in any patient demonstrating reflux accompanied by upper tract urographic changes has been rescinded following demonstration that such changes may be firmly established and stable, rather than active and progressive, and therefore a period of observation for renal growth or further damage may result in surgical avoidance in verifiably stable cases. Where surgery is indicated, results have been improved by plastic reduction of the calibre of ureters functionally compromised by chronic dilatation.

The dilemma of *recurrent urinary tract infections* in pediatric and adult females has been eroded by the demonstration of a correlation between introital colonization as a prelude to infection in many such patients, while seldom documented in control groups. This fact has implied a unique vulnerability to infection in involved patients, and evidence suggests an altered state of the urethral and vesical mucosa which allows bacterial adherence and colonization, both necessary to overt clinical infection. Recently described is a vaginal antibody against fecal flora which is present in control groups, but absent in women suffering recurrent infections, and efforts are under way to develop methods for stimulating this antibody in deficient patients. In addition, recent evidence has suggested a significant deficit of immunoglobulin A in pediatric patients experiencing recurrent urinary infections, and further suggests this deficiency to be a potential factor in pediatric reflux nephropathy, thereby encouraging earlier corrective surgery in children with reflux associated with this documented deficiency.

*Prostatitis* has not responded as predicted to newer antibiotics expected to circumvent the unique prostatic tissue factors which have impeded prior antibiotic efficacy. Experimental evidence has demonstrated an infected human

tissue environment different from that in canine experimental models in which these particular antibacterial principles were developed, thereby recommending a different class of antibiotics as therapy. In addition, significantly reduced serum levels of zinc in bacterial prostatitis has prompted adjunctive zinc sulfate therapy with encouraging anecdotal results. Parenthetically, zinc sulfate therapy has been reported as beneficial in selected cases of infertility.

Epidemiologic experience with large series of males with *epididymitis* has suggested that those under age 30 are typically infected with Ureaplasma or Chlamydia organisms, sensitive to tetracyclines, while those over age 30 are more likely infected by coliform organisms, and therefore more sensitive to alternate therapy. Similarly, the predominant responsibility of the former organisms for *non-gonococcal urethritis* is now an established fact.

#### SEPTIC SHOCK

Progress in the area of septic shock has included the elucidation of the apparent etiologic and prognostic importance of a humoral factor designated *opsonic surface binding alpha 2 glycoprotein*, proved necessary to reticuloendothelial cell phagocytosis (recognition and ingestion) of abnormal circulating particles. This factor is markedly diminished after trauma (including surgery, burns, and sepsis), rebounding in patients who recover and remaining depressed in those who expire. (Shock is often accomplished by a failure of peripheral phagocytosis, and collection of noxious particles in the lungs accounts for "shock lung." In addition, leukocyte activity during the shock state may become undesirably toxic.) This knowledge has prompted speculation that administration of this factor, present in the cryoprecipitate of slowly thawed frozen plasma, may benefit patients with resistant shock, anecdotal reports of which have recently appeared.

#### MISCELLANEOUS

1. Reports of success attendant upon pharmacologic improvement of *prostatic obstruction* sufficient to obviate surgical correction are premature, and reports of benefit tend to be uncontrolled, unpredictable, unreliable, and often accompanied by unacceptable side effects.

2. *Renovascular hypertension*, now amenable to reliable documentation (differential renal vein

renin levels) and corrective revascularization, nonetheless awaits a satisfactory diagnostic screening test, and too often yields equivocal quantification values. Saralasin, although falling short of the panacea it was predicted to be in this regard, has provided a valuable adjunct to conventional diagnostic methods, and furthermore holds promise for therapeutic use. Similar current agents and future refinements are anticipated to further minimize this problem. Surgical results have improved with the judicious employment of renal biopsy, correlated with angiographic demonstration of collateralization, to assist prognostic decisions, as well as with the proven use of dacron-velour prosthetic grafts when autologous vessels are unavailable.

3. *Ureteral obstruction* by fibrotic, inflammatory, or neoplastic processes is now potentially protected from ablative or reconstructive surgery by the intra- or non-operative (endoscopic) insertion of permanent inert catheters, protected from migration by various structural modifications.

4. Reversibility of *vasectomy* is now a reality, with microsurgical techniques raising patency rates to the 90% range. Fertility rates fail to achieve this high figure, considered to be related to sperm-agglutinating or -immobilizing antibodies, but nonetheless easily exceed results of conventional surgical methods. Conversely, a cottonseed derivative is the newest hope for pharmacologic male contraception.

5. An enormous intelligence has accumulated pertaining to *male infertility*. Although significant predictive benefits are yet to develop, therapy now rests on sounder principles than the former "shotgun" or fad approaches which usually exchanged little success for the time, expense, and emotional investment involved. These principles involve considerations of semen quality, gonadotropic and androgenic hormone levels, ductal obstruction, germinal histology, varicocele influences, and the possibility of antibody interference in either or both partners. A rational approach often provides information sufficient for diagnostic conclusions well before all studies

are required. Therapy is ultimately directed toward surgical relief of obstruction or varicocelectomy, administration of exogenous tropic or releasing hormones, interruption of antibody stimulation and/or suppression or, most importantly, a frank confrontation of the fact of hopelessness.

6. A rapid expeditious surgical creation of a hunt between the glans and either corpus for the reversal of *priapism* has emerged as the simplest technique of its kind to date, supplanting corporo-saphenous and corporo-spongiosum shunts, with overall benefits equal or improved.

7. *Hypospadias* repair has advanced from the era of planned 2 — and 3 — stage techniques, often with anticipated revisions, to current efforts toward exclusively 1 — stage methods, including significantly reduced complication rates.

8. Management of pediatric *cryptorchidism* has remained unchanged, with the exception of recommended earlier repair to avoid progressive dysplasia relating to extrascrotal residence. When indicated, exploration can be preceded by gonadal venography for verification and location of the ectopic testis. Similarly, serum testosterone response to exogenous gonadotropin administration reflects presence or absence in cases of empty scrotum. Microvascular anastomosis allows scrotal positioning of otherwise hopelessly short vessels in selected cases.

9. *Testicular torsion*, requiring urgent surgical intervention, may be differentiated from epididymitis by isotope scanning, Doppler techniques, or thermography. False interpretations, undesirability of delay, and likelihood of clinical diagnosis render these studies best relegated to verifying a clinical decision not to operate, or to presentation for care well after symptomatic onset.

10. Decisions regarding sex assignment in *intersex* dilemmas may be simplified as a result of the demonstration of a chromosomal histocompatibility antigen (H-Y antigen), representing either the testis-determining factor or a factor closely linked with the actual testis-determining gene.





# "Trigger Finger"

## A Common Hand Problem

Richard J. Nasca, M.D.\*

**SUMMARY:** The clinical presentation of stenosing tenosynovitis of the finger flexor tendons commonly referred to as "trigger finger" is discussed. The patho-anatomy is reviewed to enhance an understanding of the non-operative and operative treatment. Results with injection therapy may not be lasting. A method of operative treatment done under local anesthesia in an ambulatory in-hospital operating facility is described. The results and complications of the operative procedure are discussed.

Frequently those in the latter decades of life note intermittent locking of their long or ring fingers. Triggering of the thumb is seen in adults but more frequently as a congenital problem in infants.<sup>1</sup> These episodes are characterized by a "fixed" flexed attitude of the proximal interphalangeal joint of the involved finger. The flexion deformity usually occurs near the end of active flexion of the digit. At this arc of flexion the flexor tendons, namely the sublimus and profundus, are rolled up together and cannot slide through the proximal pulley of the digit. In order for the patient to unlock or extend the finger, passive traction is applied to the digit while attempting to extend it. This maneuver allows the flexor tendons to uncoil and slide back under the proximal pulley.

**PATHO-ANATOMY:** In the palm, proximal to the distal palmar crease, the finger flexors are not constrained. At the level of the distal palmar crease, the proximal pulley system begins. This is composed of the metacarpal head and neck dorsally and fibrous bands of interlacing ligaments which form the sides and the top (volar portion) of the fibro-osseous tunnel through which the flexor tendons pass. These structures are also called pulleys since they align and guide the course of the flexor tendons within the digit. Hand anatomists have described in great detail these pulley systems.<sup>2</sup> For practical purposes the three (3) digital pulleys are as follows: proximal — extends from the metacarpal head and neck to the distal-middle third of the proximal phalanx;

middle — spans across the PIP joint and into the middle phalanx; distal — overlying the distal middle phalanx. (Figure 1.)

Apparently with aging and loss of elasticity within the ligamentous and fibrous tissue of the hand the proximal pulley of the digit contracts in volume. This creates a stenosis of the fibro-osseous tunnel making it difficult for the flexor tendons to clear it in acute flexion. (Figure 2 A & B.) This in turn leads to a mechanical irritation of the synovial lining of the flexor tendons which causes a further decrease in tunnel space by virtue of the synovitis. Repeated locking will aggravate the synovitis with synovial fluid production and synovial thickening. Fraying of the flexor tendons may also occur with deformation after repeated entrapments over a long period of time. Nodularity of the flexor tendons is seldom seen. In the rheumatoid patient active synovitis

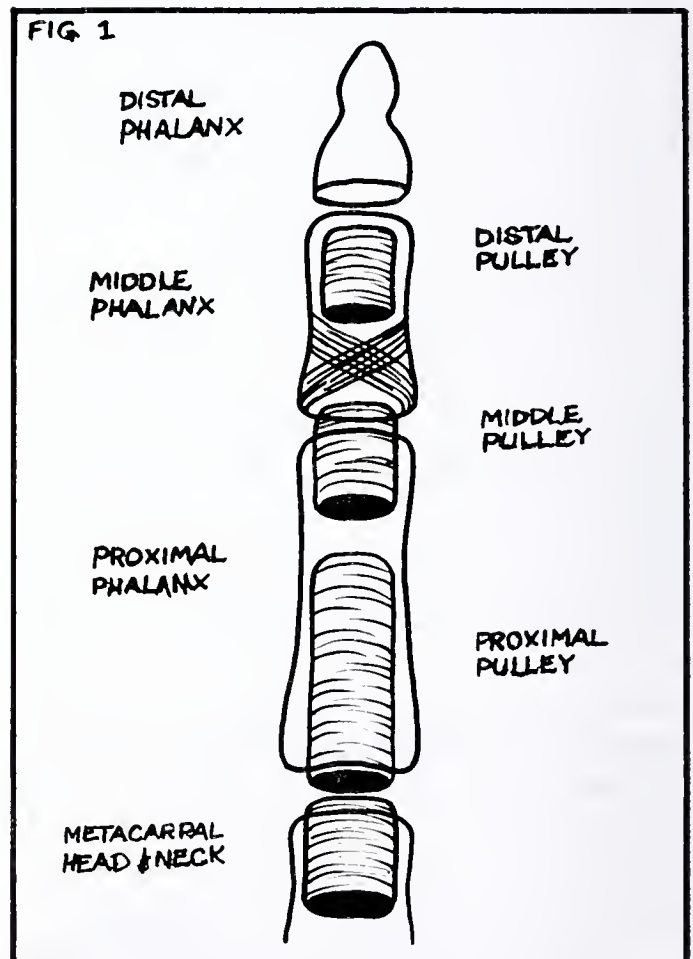


Figure 1.

Anatomy of the finger flexor pulley system simplified. These pulleys are seen in a palmar view of an extended finger.

\*1100 North University, Suite 30, Little Rock, Arkansas 72207.

of the flexor tendons is quite common and triggering of one or several fingers may be seen early in the disease.<sup>3</sup>

**CLINICAL PRESENTATION:** Men and women appear to be equally affected. It is rare to see a patient experience stenosing tenosynovitis of the flexor tendons before age 50 unless they have rheumatoid arthritis or other connective tissue disease. The onset is insidious, rarely is there a history of trauma. Housewives, manual and white collar workers appear to be equally affected. In our experience, blacks are rarely affected.

Most commonly triggering occurs in the long, or ring fingers. The thumb is less often involved, the little and index fingers rarely. Both hands may be affected at the same time with different degrees of severity. Patients complain not so much about the locking as the discomfort in the proximal interphalangeal joint, especially along the extensor aspect. Because of this, many are told that they have a "touch of arthritis" and

are advised to take anti-inflammatory agents and soak the hand in hot water. Undoubtedly, these simple measures may give some relief, but do little to relieve the mechanical problem. Repeated locking of the digit can be a real inconvenience and may lead to hand injury while working with appliances and machinery.

On physical examination a firm mass is often felt to be trapped under the palpating examiner's finger at the level of the distal palmar crease. As the patient unlocks the finger, one can feel this mass move and resolve. What one is feeling is the mass of rolled up flexor tendons which are uncoiling as the finger unlocks.

**NONOPERATIVE TREATMENT:** Blocking the ability of the digit to flex will prevent the problem from occurring but it is not a very practical long term solution. Injection under the proximal pulley in an attempt to distend it with a mixture of 1 or 2% local anesthetic and a corticosteroid preparation is often successful but may not be curative. After scrubbing the hand with an antiseptic, the skin overlying the distal palmar crease is anesthetized with a small gauge needle. This may cause a great deal of discomfort so the patient should be forewarned and either lying down or seated with the involved upper extremity supported. After adequate local anesthesia is obtained, one attempts to pass a short, small gauge needle under the proximal edge of the proximal pulley. The final angle of insertion will be almost parallel with the palmar surface of the hand. If possible one should avoid puncturing either the pulley or the flexor tendons. The more stenotic the proximal pulley, the more difficult the procedure and the less successful one will be. A volume of anywhere between one-half (1/2) and three (3) cc's may be injected. I usually attempt to get 1 cc of local anesthetic inside the proximal pulley and then follow with an equal volume of corticosteroid preparation. Usually if the injection is properly placed, the patient will not be able to relock the finger. On occasion a properly placed injection will not immediately prevent locking due to chronic tenosynovitis of the flexor tendons. Use of a finger splint to prevent flexing of the MP and PIP joints for ten to fourteen days is helpful in reducing the synovitis. The patient should be shown how to apply the splint and remove it periodically for active motion trying to avoid acute flexion.

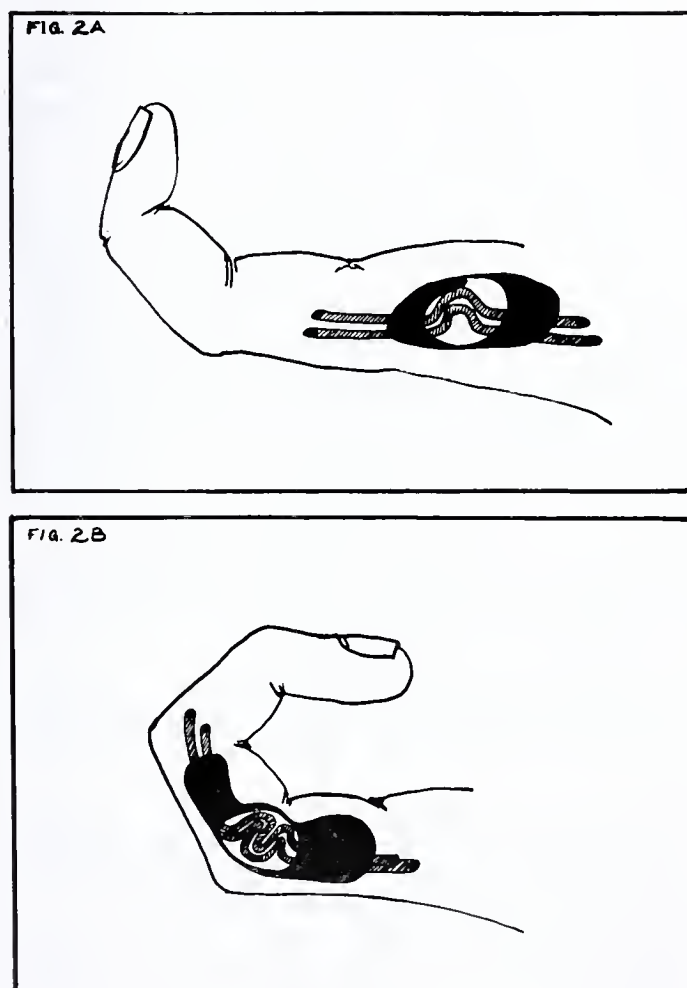


Figure 2, A & B.

Diagrammatic representation of mechanics of trigger finger. Figure 2 A circular cutaway of proximal pulley showing flexor tendons rolling up upon initial finger flexion. Figure 2 B depicts flexor tendons "caught" in stenotic proximal pulley. Note finger is acutely flexed.



**OPERATIVE TREATMENT:** Many people fail to get lasting relief from the injection, probably because of the imprecision of the technique and the abnormal anatomy of the fibro-osseous tunnel. Surgical release of the palmar portion of the proximal pulley is done under local anesthesia as an outpatient procedure in a hospital operating room. Good light, small instruments, stable operating surface, pneumatic tourniquet and one assistant are necessary to the success of the procedure. Local anesthesia is employed to the skin and subcutaneous tissue in and around the distal palmar crease overlying the involved digit(s). A digital nerve block is unnecessary. A pneumatic tourniquet is usually tolerated for ten to fifteen minutes without discomfort.<sup>4</sup> A tense patient may require additional systemic analgesia preoperatively or intra-operatively, but in most sedation can be bypassed.

A transverse incision parallel to or in the distal palmar crease for 1 to 1.5 cms. provides adequate exposure in most cases. (Figure 3.) Subcutaneous fat may be pushed aside bluntly. Care should be taken to protect and know at all times where the neurovascular bundles are in relationship to the small right angled retractors used and the tenotomy scissors. A flat dissector is useful in feeling the tightness of the proximal pulley and in protecting the flexor tendons during the incision into the pulley. Usually we incise a 1 cm. length of proximal pulley and 1-2 millimeters on either side of the midline cut. At this point the patient is asked to flex the finger. If the proximal pulley release has been satisfactory, no locking will occur. If an inadequate release, further distal incision of the pulley is necessary and re-evaluation with active flexion is carried out. Passing a

flat dissector can also be done to check patency. The tourniquet is released. Occasionally simple pressure is insufficient to stop small subcutaneous bleeders and electrocautery may be necessary. The incision is closed with interrupted sutures through the skin and subcutaneous tissue. Light dressings are applied. No splints are used and the patients are encouraged to move the operated finger(s) as soon as comfortable to prevent adhesions within the flexor tendon system. Usually a minimal amount of mild analgesia is needed postop for a few days. Sutures are removed at fourteen days since this area of the skin is subjected to a lot of shearing forces as the finger is flexed and extended.

**RESULTS AND COMPLICATIONS:** Results of surgical treatment have been good to excellent in the majority of patients. Occasionally adhesions will form between the flexor tendons and the surrounding tissue causing loss of flexion and flexion contractures. Damage to the digital nerves and vessels can occur if care is not taken to protect them or they are unduly stretched with retraction. Although incision of the distal part of the proximal pulley may be somewhat blind by this technique, adequate but careful retraction and delicate instruments make it a safe procedure in experienced hands.

Usually within four to six weeks most patients are able to resume full activities of daily living with the operated hand including hobbies, crafts, and sports. Improvement in proximal interphalangeal joint pain occurs after surgical release. Release of multiple pulleys without synovectomy in the rheumatoid patient may predispose or aggravate ulnar drift of the fingers.<sup>3</sup>

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The author would like to acknowledge the artwork of Mitchell Jansonius.

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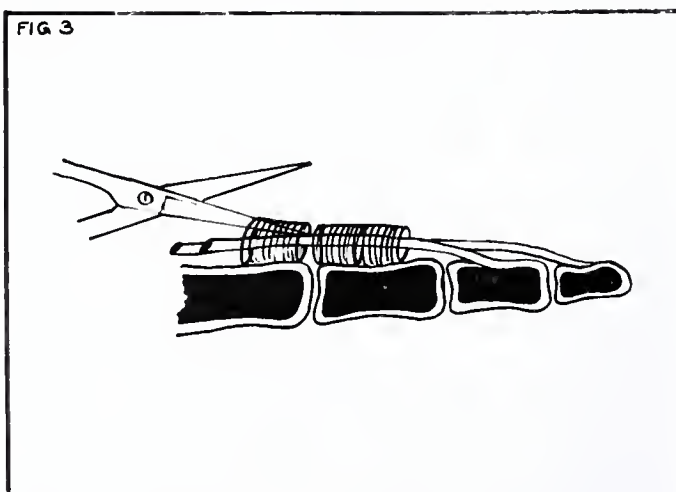


Figure 3.

Demonstrates scissors opening palmar surface of proximal pulley. Lateral view.

# Medical Grand Rounds:<sup>\*</sup>

## Sleep Apnea Syndrome

F. Charles Hiller, M.D., Edgar A. Lucas, Ph.D.,  
James R. Phillips, M.D., Mark D. Wewers, M.D.<sup>\*</sup>

### INTRODUCTION

The recognition that certain ventilatory disorders can occur during sleep has come about primarily the last decade. A variety of clinical situations which are associated with hypoventilation have been described for some years. The most well known of these is the Pickwickian syndrome which includes obesity, hypersomnolence, periodic breathing, hypoventilation, and cor pulmonale. In 1965, French investigators recognized that apneic episodes occurred during sleep in the Pickwickian patients. Interests in the relationship between respiratory abnormalities and sleep increased and in 1972, a conference was held to bring together experts interested in these combined disorders. From this conference, the concept of the sleep apnea syndrome was developed and the clinical features were described. Since that time, the sleep apnea syndromes have been much better characterized and clinicians have begun to recognize that the syndrome is relatively common.

The purpose of this review is to summarize current information regarding these syndromes. The major topics for discussion are normal sleep physiology, and the clinical aspects of sleep apnea syndrome.

### NORMAL SLEEP PHYSIOLOGY

#### Normal Phases of Sleep

Sleep is divided into five stages. These are sleep stages 1 through 4 and rapid eye movement (REM) sleep. These are defined using electroencephalograms (EEG), electrooculograms (EOG), and electromyograms (EMG) made during sleep.<sup>1</sup>

Stages 1 and 2, or light sleep, are characterized by so-called "periodic breathing." In periodic breathing, the tidal volume may wax and wane cyclically and may resemble Cheyne-Stokes breathing. The extent of periodic breathing in normal persons is variable and generally greater

in those over 40 years of age. It is possible for brief episodes of apnea to occur during this periodic breathing.

Stages 3 and 4 are called slow wave sleep. During slow wave sleep, the reparative processes and growth processes of the body are enhanced. The visceral functions are almost totally under metabolic/automatic control. The respiratory pattern during slow wave sleep is regular. The minute volume is one or two liters less than while awake and as a consequence, the PaCO<sub>2</sub> increases 4-8 mmHg and the PaO<sub>2</sub> decreases 3-10 mmHg.

During normal REM sleep, the EEG is desynchronized and in many respects resembles wakefulness. Skeletal muscle tone is depressed, with the limbs in particular being hypotonic. In contrast to more peripheral muscles, the muscle tone is maintained in facial muscles and phasic contractions occur which may show caricatures of awake behavioral events. In general, automatic regulation becomes highly irregular dur-

Table 1.

#### Respiration During Sleep

Respiration during light sleep (Stages 1 and 2)

Tidal volume may vary, wax and wane cyclically

(may resemble Cheyne-Stokes respiration)

Cyclic pattern is variable, increasing in persons over 40

Respiration during slow wave sleep

Breathing is regular

Minute volume slightly less than while awake

PaO<sub>2</sub> decreased 3-10 mmHg

PaCO<sub>2</sub> increased 4-8 mmHg

Minute volume highly sensitive to excitatory, tonic, vagal stimuli

Respiration during REM sleep

Breathing irregular

Apnea, 10-20 sec. in adults and 10 sec. in children may occur

Little response to external or autonomic stimuli

Series edited by Peter O. Kohler, M.D.  
<sup>\*</sup>University of Arkansas for Medical Sciences, College of Medicine,  
4301 West Markham, Little Rock, Arkansas 72201.



ing REM sleep. Ventilation in REM sleep is similarly effected. Breathing is irregular with apneic episodes of 10-20 seconds in adults and up to 10 seconds in children. Because of the decreased muscle tone, the effectiveness of the thorax in ventilation is reduced and paradoxical motion of the thorax may occur. Airway resistance is also elevated.

#### **Regulation of Breathing During Sleep**

The discussion above briefly summarizes basic aspects of sleep physiology. A more detailed elaboration of studies of respiration during sleep done in animals and man will provide a better understanding of the physiological mechanisms which are thought to be deranged in patients who develop sleep apnea.

The response to hypercapnia in dogs in slow wave sleep is linear and predictable and the increase in minute ventilation is similar to that seen in the resting awake state.<sup>2</sup> In addition, arousal occurs at a predictable level of minute ventilation. In contrast, in REM sleep the increase in minute ventilation is highly irregular as is the increase in respiratory rate, the respiratory pattern continues to be regular, and the arousal point is highly unpredictable.

The response of animals in slow wave sleep to inhalation using reduced oxygen concentration is linear and also similar to that seen in the waking state. The minute ventilation and respiratory rate are both increased and the arousal point is predictable and reproducible, occurring at a given minute volume. In REM sleep the response to inhalation using low oxygen concentration results in an increase in minute ventilation which is similar to that seen in waking states. The respiratory pattern continues to be irregular as always during REM sleep. There is a very definite difference in the minute volume response to lowered oxygen concentrations as compared to increased carbon dioxide concentration. Whereas the former results in an increase in minute ventilation similar to that seen in the waking states, the response to CO<sub>2</sub> inhalation is blunted.<sup>3</sup>

Studies to determine the influence of vagal stimuli on ventilation during sleep are also of interest. In the normal dog, hyperinflation of the lung results in a brief period of apnea. The duration of apnea following inflation is much less during REM sleep than during slow wave sleep. Vagal blockade causes a much more prominent change in the respiratory pattern during

slow wave sleep than during REM sleep. During slow wave sleep, vagal blockade brought about a marked slowing in the respiratory rate with some increase in the tidal volume. During REM sleep, vagal blockade led to some slowing of the rate and increase in the tidal volume but the change was much less than during slow wave sleep. In REM sleep, vagal blockade did not have any effect on the irregular pattern of respiration.<sup>4</sup>

These studies in animals and man indicate that ventilation during REM sleep is much less influenced by various stimuli. The respiratory pattern remains irregular in all situations and the only response which resembles that in the wakeful state is the increase in minute ventilation induced by reduction of inspired oxygen concentration. In slow wave sleep on the other hand, the respiratory pattern is highly influenced by a variety of anatonically mediated stimuli, and the removal of some of these may lead to a marked decrease in ventilation.

#### **Various Patterns of Ventilation Seen During Sleep in Normal Subjects**

The above description of respiratory patterns within the normal sleeping human subject indicates that there are episodes during which ventilation is irregular and during which apnea may occur. It is thus important to define the extent of these events in normal subjects so that criteria useful in separating normal persons from patients with the sleep apnea syndrome could be defined. Occasional short apneic episodes may occur in sleep stages 1 and 2 and during REM sleep. These episodes in adults are rarely longer than 30 seconds. In adults in the 45-60 age bracket, respiratory abnormalities were much more frequent in men.<sup>5</sup> In one study of 38 symptomatic men (average age 38) and 19 asymptomatic women (average age 29), respiratory patterns and oxygen saturation were monitored during one night's sleep.<sup>6</sup> Apnea in this study was defined as cessation of air flow for 10 seconds or longer, desaturation when the saturation fell 4% or more, and hypopnea when air flow decreased, chest movement decreased, and desaturation occurred together. Twenty of the men and three of the women demonstrated these defects. Most defects occurred during light sleep and REM sleep but rarely in slow wave sleep. The subjects who were more obese were more likely to have these sleeping events. Seventeen men

had 251 episodes of desaturation with a mean maximal change in saturation of 11%. Most of the episodes of desaturation occurred during abnormal breathing but a sizable number also occurred with normal breathing. Hypopnea occurred in men only, seen in 11 in this group. Apnea occurred in 12 men who had a total of 51 episodes with an average duration of 20 seconds. Apnea was seen in only three women who had a total of nine episodes, none being associated with desaturation. Overall, 20 of the male subjects had 264 abnormal events while three of 19 female subjects showed only nine total events.

It is thus clear that apparently normal subjects display sleeping respiratory irregularities similar to those seen in sleep apnea; but in normal persons, these are not nearly so numerous or prolonged. There is a striking difference between the sexes, males being much more likely to show irregularities than females.

### SLEEP APNEA SYNDROMES

A variety of defects in ventilatory drives have been recognized for a number of years. Most commonly the defects are associated with easily definable damage to the respiratory center as might occur with brain stem infarction or poliomyelitis, or due to iatrogenic or self-induced overdose with drugs which suppress the ventilatory drive.

Primary alveolar hypoventilation is a relatively rare condition which seems somewhat related to the sleep apnea syndrome. The Pickwickian syndrome with its hypersomnolence, periodic breathing, and hypoventilation is perhaps the best known of the entities now included in the category of sleep apnea syndrome. With the increasing interest in these syndromes, they are being recognized more often and it is likely that general internist and family practitioners may see patients with this syndrome. Likewise, the variety of abnormalities which they display may bring them to the attention of a variety of specialists.

### Clinical Features of Sleep Apnea Syndromes

Observations made during sleep and a history obtained from others who view the patient during sleep are of great importance in evaluating these sleep apnea syndromes. Snoring is seen in all patients with obstructive sleep apnea and generally occurs frequently throughout the night in those patients. Snoring is much less common in patients with central apnea but is generally

seen at some point during the night.<sup>5</sup> It is important to observe the character of the snoring. While many persons snore, normal snoring is more a nasal phenomenon than is the snoring in patients with sleep apnea which is usually at the pharyngeal level. Snoring is an indication of incomplete airway obstruction. The snoring may precede the development of clinically apparent sleep apnea by many years and has often been a longstanding nuisance to others sleeping in the same area. Snoring has been reported to develop in several children who were "near misses" for the sudden infant death syndrome. The chronic incomplete airway obstruction which causes snoring may also produce a chronic nocturnal decrease in alveolar ventilation which may lead to chronic hypoxemia and pulmonary hypertension during sleep. The incomplete airway obstruction which causes snoring may change to complete apnea, a complication which is enhanced by sedation. Sedatives and alcohol are therefore contra-indicated in persons who snore until there has been a careful evaluation of the nature of the snoring.

A wide variety of abnormalities other than snoring are also noted during sleep. Many patients are unresponsive to painful stimuli. They

**Table 2.**  
**Definitions of Terms Used in**  
**Sleep Apnea Syndromes**

Apnea:	cessation of air flow at the nose and mouth lasting at least 10 seconds
Sleep apnea syndrome:	30 apneic episodes in both REM and non-REM sleep during seven hours of sleep
Central apnea:	cessation of air flow due to cessation of all abdominal and thoracic respiratory efforts
Obstructive sleep apnea:	cessation of air flow due to upper airway obstruction in the face of persistent respiratory effort
Mixed sleep apnea:	cessation of air flow respiratory effort early in an episode followed by resumption of respiratory effort but persistence of apnea due to airway obstruction

**Table 3.**  
**Snoring in Sleep Apnea**

Occurs in all with obstructive apnea
Indicates partial obstruction in oropharynx
May be of years duration
Has developed in children who were near misses for sudden infant death syndrome



**Table 4.**  
**Abnormal Behavior During Sleep**  
Abnormal movements during sleep  
Somnambulism  
Nocturnal enuresis  
Unresponsive to painful stimuli  
Frequent lengthy arousals (seen in minority)

may demonstrate abnormal motor activity, including limb movement which may be slight or vigorous. Some patients have been known to flail vigorously in bed to the extent of injuring a bed partner. Patients have been known to sit up in bed during apneic episodes and collapse to the bed on resumption of breathing. Sleep walking has also been reported, and the patient may collapse to the floor after a period of sleep walking and remain on the floor throughout the night. Nocturnal enuresis occurs in most children with the syndrome and occasionally in adults. The evaluation of enuresis therefore should include questions about the respiratory pattern and other behavior during sleep. A minority of persons with sleep apnea complain of frequent lengthy arousals at night with the inability to return to sleep during the night. Some patients are disoriented when first awakened in the morning.

Changes in daytime behavior are also common in patients with sleep apnea. Hypersomnolence is one of the greatest problems and may be quite severe so that the patient's normal function is impaired.<sup>7</sup> Such patients may go to sleep during

sensation of being unable to move) are also fairly common. A minority of patients, namely those who have difficulty with frequent arousals at night followed by inability to return to sleep, do not complain of daytime hypersomnolence.

The physical examination of these patients is often unremarkable. Most are overweight but not necessarily severely obese, and there are generally no other physical findings which might explain the respiratory defect. Physical defects such as micrognathia which might be taken as a cause for the airway obstruction are seldom seen. The neurologic examination is usually normal as is the electroencephalogram. The pulmonary function tests including response to hypoxemia and hypercapnia are also generally unremarkable when the patient is awake. Hypertension, both systolic and diastolic, are present in about 60% of both adults and children with these disorders. Some patients may have findings of cor pulmonale. This is generally seen in those who have had the syndrome for a long period of time. A wide variety of cardiac rhythm disturbances are seen frequently during sleep in patients with sleep apnea when they are monitored during sleep. The sudden deaths reported in patients with sleep apnea have been attributed to arrhythmias, but these patients are seldom monitored at the time of death. Solid evidence that arrhythmias are the cause of sudden death is lacking. Nocturnal arrhythmias often disappear or decrease in frequency when tracheostomy is performed in patients with obstructive sleep apnea.<sup>8</sup>

**Table 5.**  
**Daytime Complaints in Obstructive Apnea**

<i>Symptom/Sign</i>	<i>Occurrences</i>
Hypersomnolence	84%
Personality change	64
Intellectual deterioration	60
Hypertension	56
Sexual problems	48
Abnormal outbursts	44
Morning headaches	44
Hypnagogic hallucinations	40

a medical interview or while driving a car. Hypersomnolence to this extent can make the disorder incapacitating. Some patients have been reported to undergo personality changes and intellectual deterioration. Morning headaches are not uncommon. Hypnagogic hallucinations (an episode in which the patient experiences vivid sensory images or dreams accompanied by the

**Sleep Laboratory Evaluation**

Evaluation in a sleep laboratory begins with a detailed interview which should aid the examiner in designing appropriate tests and interpreting the results. It is especially important to determine the nature of the complaint both from the patient and the bed partner if possible. A careful interview will often reveal other causes for the problem. In particular, such problems as narcolepsy, restless leg syndrome, and nocturnal myoclonus all share with the sleep apnea syndrome the common complaint of excessive daytime sleepiness. Although the examiner may suspect one of these particular disorders from the initial patient interview, that suspicion can be confirmed only by conducting studies during sleep. This is particularly important because patients may be incorrectly diagnosed or suffer

from two problems such as sleep apnea and narcolepsy simultaneously.

The sleep laboratory evaluation includes the measurement of a variety of functions. The electroencephalogram and electromyogram is essential in that it allows documentation of the sleep stage during which abnormalities occur, the quantitation of the amount of time spent in various stages of sleep, and the degree of distortion in normal sleep structure. The electrocardiogram is essential to describe qualitatively and quantitatively arrhythmias which may occur only during sleep. An evaluation of airflow is also essential. This is accomplished by placing thermistors at the mouth and nose which are sensitive to temperature changes resulting from movement during respiration. The presence or absence of respiratory effort is measured by strain gauges around the chest and abdomen. The evaluation of changes in arterial oxygen tension or saturation may be useful in some cases and can be accomplished either using an ear oximeter or indwelling arterial catheter. If the restless leg syndrome is a diagnostic consideration, electromyograms

are recorded from the tibialis anterior muscles of the legs.

For the sleep apnea patient, the all night recording permits one to determine the total amount of sleep by stage, the sequence of sleep stages, and a comparison to normal data. One can determine whether the apnea episodes are central or obstructive, the number and duration of apnea episodes, and their impact upon normal sleep. Also the effect on blood gases can be assessed. It is especially important to define whether or not the patient has obstructive or central apnea since the treatment is considerably different. Although the criterion for diagnosis of sleep apnea is 30 or more episodes per night,<sup>5</sup> most patients who suffer from this syndrome have several hundred episodes during a night's sleep. The electrocardiogram tracing allows the assessment of arrhythmias. Arrhythmias are relatively common and are thought to contribute to the relatively high rate of sudden death in these patients. The tracings shown in Figures 1-3, below illustrate typical examples of various types of sleep apnea.

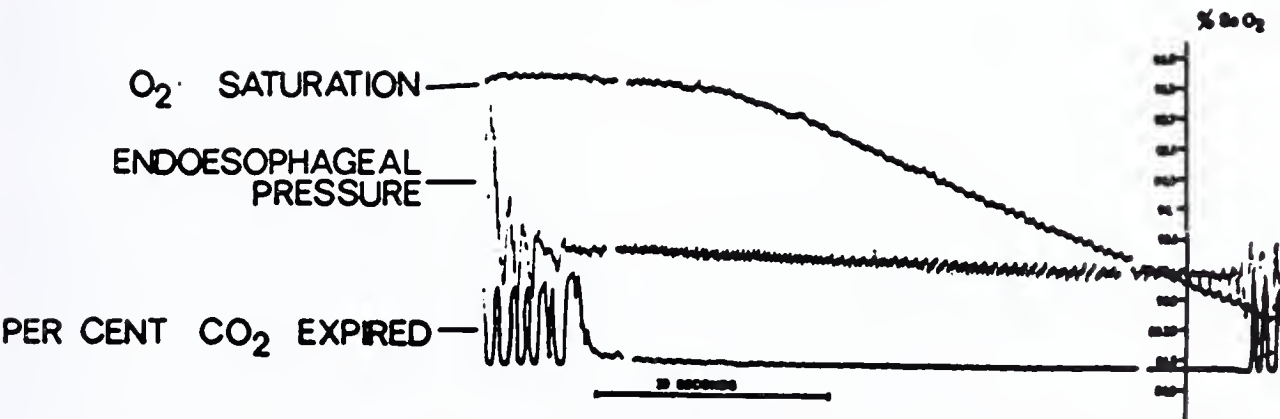


Figure 1. Central sleep apnea: the top line shows a falling O<sub>2</sub> saturation associated with failure of respiratory effort indicated by the absence of swings in esophageal pressure. The abrupt cessation of fluctuations in percent expired CO<sub>2</sub> shows that no air is moving. Cessation of effort indicates central apnea.

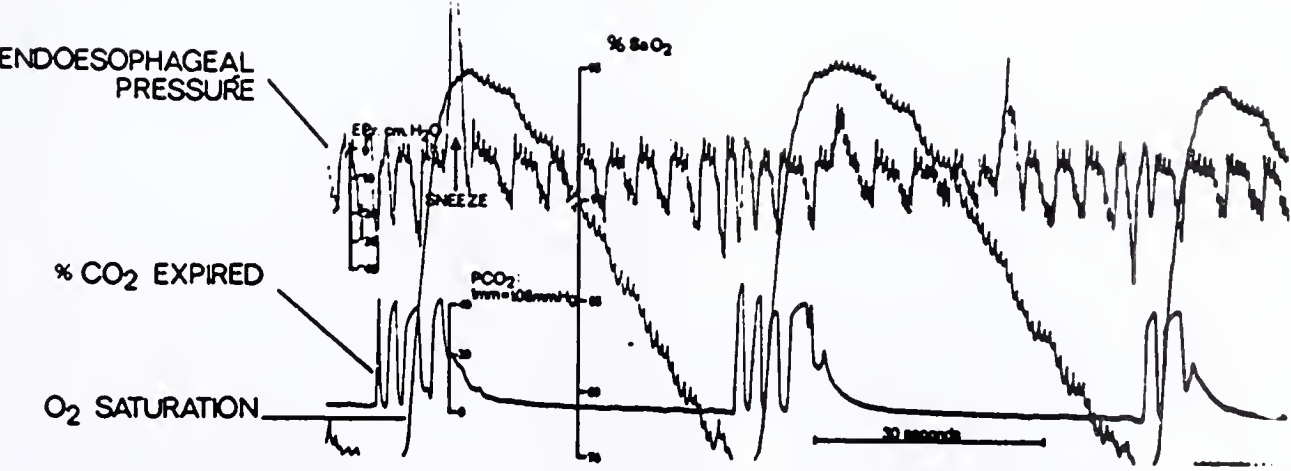


Figure 2. Obstructive sleep apnea: the fluctuations in expired CO<sub>2</sub> stop abruptly for over 30 seconds even though esophageal pressure tracing indicates persistent respiratory effort. O<sub>2</sub> saturation falls markedly when airflow ceases. Cessation of flow associated with persistent respiratory effort indicates obstructive apnea.



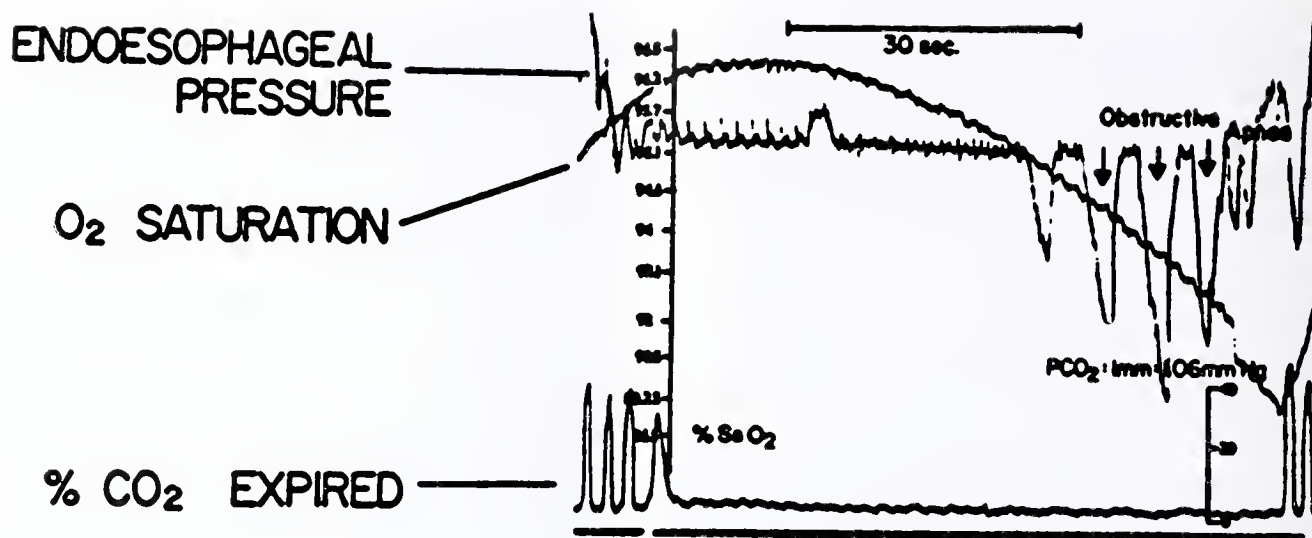


Figure 3.

Mixed sleep apnea: cessation of flow indicated by absence of fluctuations in expired  $\text{CO}_2$  is accompanied by a declining  $\text{O}_2$  saturation. The initial portion of the episode is of the central type since there is no effort to breathe indicated by absence of vibration in esophageal pressure. The terminal portion of the episode is obstructive apnea since variations in esophageal pressure with no airflow indicate airway obstruction.

### Pathophysiology of Sleep Apnea

The control of respiration in general, and in particular during sleep apnea, is not well understood. Certain aspects of respiration during sleep have already been discussed in this review. Although the understanding of the defects which are necessary to bring about the development of these sleep apnea syndromes is incomplete, some generalizations can be made.

In obstructive apnea, the airway obstruction is located in the oral pharynx. In some cases, large tonsils or adenoids are thought to be partially responsible for obstruction, especially in children. However, these findings are relatively common in children while the sleep apnea syndrome is unusual. It is therefore difficult to implicate enlarged lymphoid tissue as the sole cause. In obese persons, the obstruction has been attributed to accumulation of fat in the tissues surrounding the oral pharynx. Although obesity is relatively common in patients with obstructive sleep apnea, few obese persons develop sleep apnea. The development of the syndrome probably relates at least in part to defects in control of the muscles of the oral pharynx. A degree of muscle tone is generally present in these muscles, and the tone is increased somewhat during inhalation so that collapse is prevented despite the greater pressure outside than inside the upper airway. In particular, the tone of the genioglossus (tongue) must be maintained to prevent the tongue from falling into the oral pharynx during inspiration. Some investigators have shown that in patients with obstructive sleep apnea, electromyographic measurements in the genioglossus reveal an abnor-

mally low level of muscle activity. These findings suggest that, for unexplainable reasons, the tone of the tongue is insufficient to prevent it from occluding the upper airway. This is probably the best current explanation for the development of obstruction in patients with obstructive apnea. Although the reasons for the failure of these muscles in the oral pharynx to perform adequately is unclear, one might postulate that a defect exists in the respiratory center or ancillary brain stem centers responsible for maintaining muscle tone.

Since patients with central sleep apnea make no effort to breathe, it seems apparent intuitively that they suffer from pathology located in the respiratory center or ancillary structures. This entity has also been called primary alveolar hypoventilation and should be differentiated from sleep apnea caused by airway obstruction. As discussed in an earlier section of this review, the maintenance of a respiratory rate during slow wave sleep depends to a large extent on tonic stimuli. Withdrawal or reduction of those stimuli could cause apnea. However, during slow wave sleep, the resulting blood gas disturbances would lead to arousal at a particular level of hypoxia or hypercapnia. If, however, the ventilatory response to hypercapnia or hypoxia were impaired, apneic periods could become prolonged. This situation may exist in sleep apnea syndrome of adults. Persons with these disorders typically have periods of apnea during slow wave sleep that result in frequent arousals. Their ventilatory response to carbon dioxide is often in the low normal or subnormal range, especially

when drowsy. These explanations can be extended to suggest that if the response to hypercapnia or hypoxia were exceedingly small or absent, apneic periods during sleep could become extremely prolonged, a situation which may be the case with chronic primary alveolar hypoventilation. The onset of central apnea during slow wave sleep is probably due to the withdrawal of tonic excitatory stimuli from neurons involved in autonomic respiratory control. The episode, however, should be quickly terminated if the chemoreceptors are intact but may be prolonged if there is relative insensitivity to hypercapnia or hypoxemia.

During REM sleep, the relative unimportance of autonomic regulations make it likely that the mechanism for apnea is different than during slow wave sleep. The reason for the onset of apnea in REM sleep is difficult to explain. Once apnea develops during REM sleep, however, it is the hypoxic response rather than the hypercapnic response which must terminate the episode. Termination during REM sleep must depend primarily on an intact hypoxemic response since that seems to be the only stimulus which is sensitive in REM sleep to a similar extent as noted in the waking state or in slow wave sleep. The elimination of the normal response to hypoxemia would be likely to result in significantly prolonged apnea during REM sleep. Since patients with sleep apnea generally have apnea during both REM and slow wave sleep, the exact inter-relationship between the various mechanisms, however, remains to be explained.

### Therapy of Sleep Apnea

Two approaches to therapy have generally been tried in patients with central apnea. The first is the use of respiratory stimulants such as theophylline, acetazolamide, clomipramine, and medroxyprogesterone. These agents have met with variable success, none being useful in a consistent fashion in all patients. Phrenic nerve pacing is probably the best approach to therapy in a patient with severe central apnea who does not respond to stimulants.<sup>9</sup> The results of pacing are not ideal, being complicated by such things as fibrosis around the electrode so that stimulation becomes more difficult. Also, some patients who have had phrenic nerve pacemakers have initially done well only to develop symptoms of obstructive apnea later.

Obstructive sleep apnea is usually somewhat

easier to treat although the most definitive approach to therapy is met with varying degrees of enthusiasm by patients. If any anatomic obstruction is present such as marked tonsillar hypertrophy, surgical correction may be useful and might logically be tried in patients whose disease is not severe. Many of these patients are obese and they generally improve if weight loss can be accomplished. However, most of these patients find weight loss very difficult to accomplish so that investigators reporting large series of obese patients with obstructive sleep apnea report that few accomplish weight loss. The most rapid and definitive approach to therapy in obstructive apnea is tracheostomy.<sup>11</sup> In urgent cases tracheostomy should be the first approach since it can rapidly reduce the symptoms which are very bothersome to the patient, keep reduced the frequency of arrhythmias, and can probably reduce the risk of sudden death. The response of many patients to tracheostomy is dramatic and rapid. Some patients notice elimination of their hypersomnolence and other unpleasant symptoms within 24 hours. Because tracheostomy may seem a rather extreme approach to some patients with sleep apnea syndrome, it is not unusual for them to initially refuse the procedure. However, it is important that the physician maintain a supporting relationship with the patients since as the symptoms continue, the patient may change his mind and accept therapy. It is important that patients with sleep apnea should not be given sedatives, and those who snore should not be given sedatives until it is clear that they do not have sleep apnea.

Since therapy for both central and obstructive sleep apnea involves specific surgical procedures, it is critical that the correct diagnosis be made. This can only be accomplished in a sleep laboratory to make all the necessary measurements. Although observation of the patient allows one to strongly suspect the diagnosis and even the type of sleep apnea, the final therapeutic approach should not depend upon clinical observation alone.

### SUMMARY

In summary, the sleep apnea syndrome has been defined sufficiently and clearly to permit recognition by most clinicians. The complications which may be associated with the syndrome may cause these patients to come to the attention of a psychiatrist, urologist, cardiologist, and spe-



cialist in respiratory disease as well as to primary care physicians. An appropriate history will usually reveal a sufficient number of findings so that a decision can be made regarding whether or not the patient should have a sleep laboratory analysis. With that analysis, an appropriate form of therapy can generally be undertaken. Therapy for patients with obstructive apnea is often dramatic with relief of symptoms by tracheostomy. Some patients with obstructive apnea however may not respond so dramatically and may require continued attention as do those who have phrenic nerve pacemakers placed for the therapy of central apnea.

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# Office Orthopaedics

## Fracture Healing

Philip H. Johnson, M.D.\*

To better understand the normal physiologic response to the interruption of bone, is to understand better how to intervene in nature's behalf. In this day of metal and plastic implants, one must not forget that it is nature's response to injury which brings about union of a fracture. All the precise modern instruments of internal fixation would be worthless if the injured part did not possess its own ability to make itself whole again. Therefore the following is the chronology of events which occur as a fracture calls upon the host to reconstruct and remodel itself. The stages discussed below are in reality a continuum of events. (Figure 1.)

### The Inflammatory Stage

The skeleton is a rigid structure which maintains the form and the shape of the anatomic part. Usually a significant injury is necessary to bring about disruption of the bony architecture. The injury usually produces stripping of the periosteal covering of bone as well as causing damage to the surrounding soft tissues. Hemorrhage is present throughout. As a consequence, a blood clot envelopes all damaged structures. It is within this hematoma that occurs an amazing sequence of events which will result in union of the fracture. Initially, an inflammatory reaction is produced. Swelling, erythema, and exudation begin to appear in the damaged area immediately following injury to peak around the third day. During this initial period of swelling, it is most important to avoid any excessive constriction by plaster or bandage. With the stripping of the periosteum and endosteum, death of bone occurs at the fracture ends, back to a point where

collateral channels are present. Actual bone necrosis therefore occurs which will be resorbed later during the healing process.

### The Organizing Stage

During this stage, the hematoma is converted to granulation tissue through the ingrowth of capillary buds from the periphery of the clot. With these capillaries, pluripotent cells of mesenchymal origin are invading by the third day. The hematoma is therefore converted from the outside inward into a busy fibrin network. Although this process begins within the first few hours after injury, the center may remain liquid for several weeks. The invading fibroblasts have an amazing ability to transform themselves to collagenoblasts, chondroblasts or osteoblasts. Under differing circumstances collagen, cartilage or bone may therefore be produced.

The first actual bone to be reproduced within this healing fracture occurs as early as the sixth day in the subperiosteal space by the stripped up periosteum. The cambium layer of the periosteum, as a response to stripping, produces appositional bone by direct conversion (intramembranous ossification). This is the first natural bony scaffold for the callus and is usually obvious on x-ray within the first two weeks after injury. To a lesser extent, the endosteum within the marrow cavity has this same ability for primary bone formation.

### The Callus Stage

As time passes, the periosteal appositional bone becomes more prominent as does the development of an endosteal bone plug. In the center and about the periphery of the fracture develops

\*Little Rock Orthopedic Clinic, P.A., P.O. Box 5270, Little Rock, Arkansas 72215.



the "cartilage collar." Metaplasia of fibroblasts to chondroblasts with the production of cartilage occurs as early as the second week. A process of chondroosseous metaplasia then develops which is identical to enchondral ossification in the growing bones of children. In this process, osteoblasts, derived from fibroblasts, surround calcified cartilaginous bars and produce osteoid which is rap-

idly mineralized. Therefore, in the center of the fracture is a cartilaginous ring within which new osteochondroid (fiberbone) is being formed. By the thirtieth day, a good osteochondral callus is produced. This lends internal and external support to the fracture. Excessive motion, however, at this point may break up the cartilage collar and result in nonunion and pseudarthrosis.

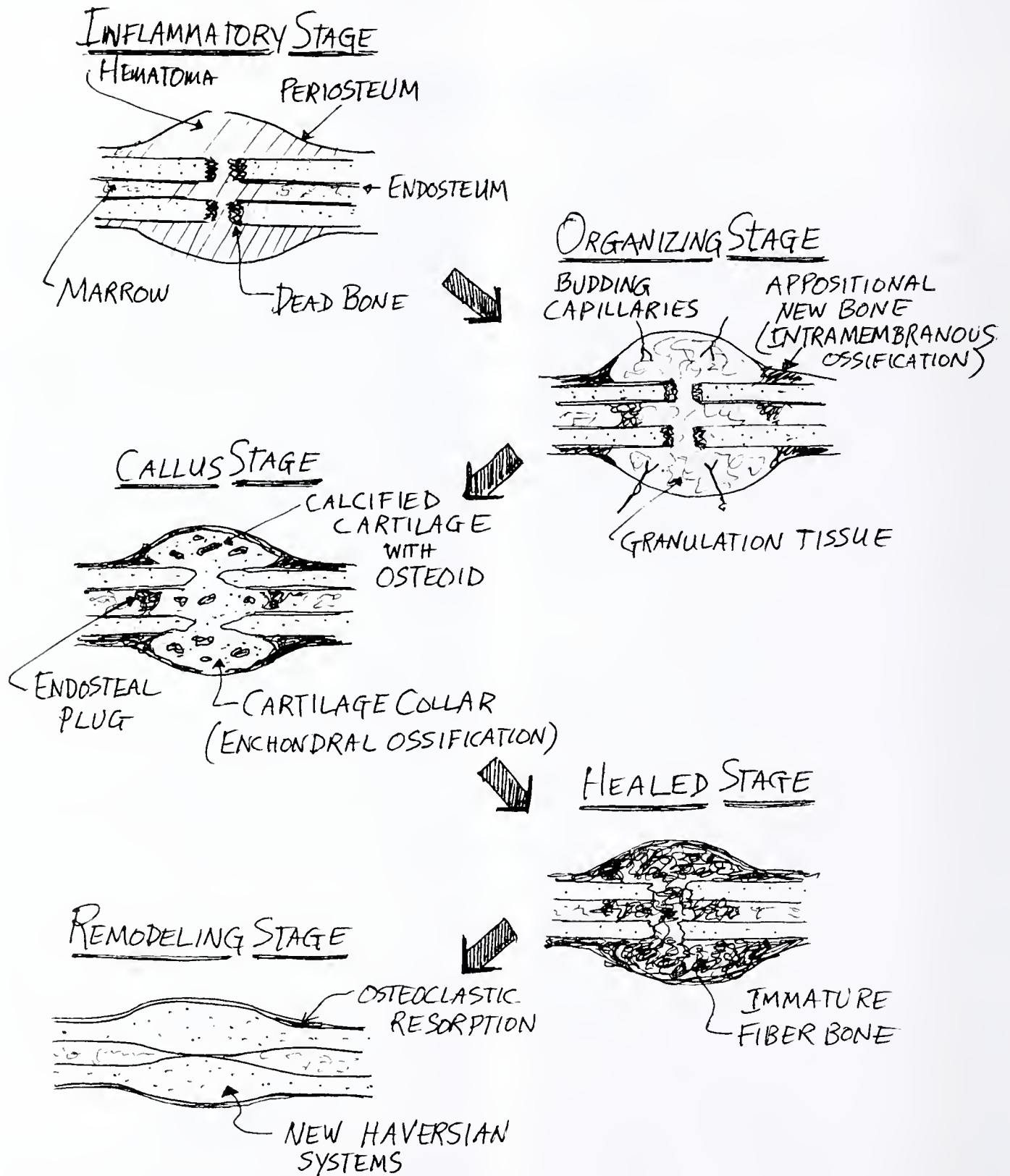


FIGURE 1

### The Healed Stage

As immature fiberbone replaces the cartilage collar and joins with appositional new bone at the periphery, strength and stability are produced. By this time soft tissue edema will be greatly resolved, and a palpable "knot" is usually demonstrable at the fracture site. Depending on the bone fractured, this mature stage of fracture healing occurs by the sixth to twelfth week. At this point, osteoclastic resorption of redundant, immature bone begins to straighten and realign many incompletely reduced fractures. These gradual responses to stress introduce the next stage.

### The Remodeling Stage

In 1892, Wolff described the process by which bone reacts to mechanical forces when applied to it. New bone is actually laid down along lines of stress. That portion of immature bone which is not needed is removed by osteoclastic activity. Osteoblasts lay down new adult bone in a more normally aligned fashion. This reaction to stress is now thought to be due to electrical currents which energize bone (the piezo-electric effect). At this stage osteoblasts lay down bone into haversian systems. This either returns the bone to its original form to a form altered according to functional needs. Consequently, the bulk of the healing bone is greatly diminished. In time, a new shaft is reconstructed and the medullary cavity is re-established.

Remodeling in children carries with it an added benefit. Malaligned, angulated fractures can be remodeled to the shape of the original structure. It is often difficult years after the fracture, to determine which extremity was in-

jured. Figure 2 shows that growth occurs in a child's uninjured femur by two methods. First, length is attained from the proximal and distal epiphysis, and secondly, appositional periosteal new bone adds circumferentially to the size of the bone. It is obvious that over a period of time, during this process, all bone tissue is replaced and remodeled. This gives the child the advantage of growing a new bone which replaces the fractured one. Figure 3 illustrates an unreduced fracture of the distal radius referred two weeks following injury. It was decided not to manipulate this healing fracture in a 10-year-old male. Serial x-rays show initial healing and progressive remodeling over a 12 month period.

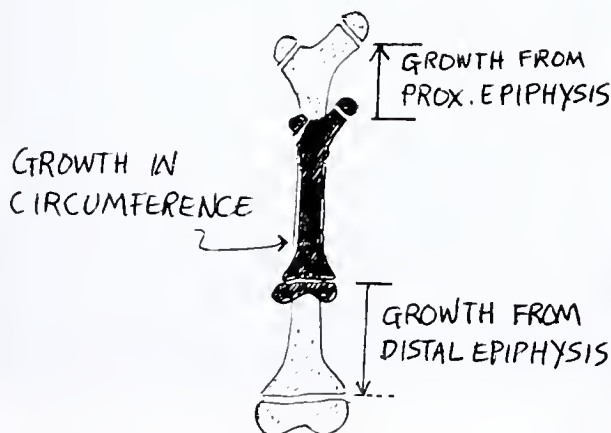
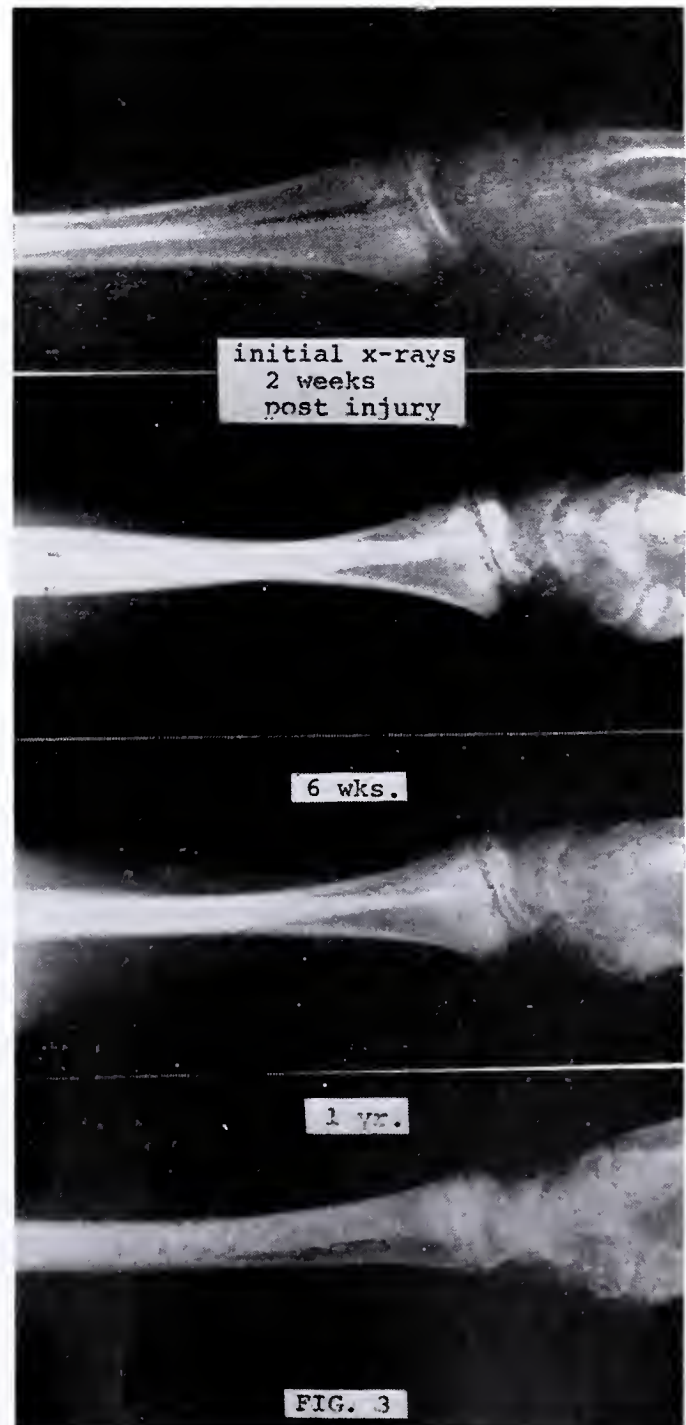


FIG. 2





### Factors Influencing Healing

1. *Extent of Injury:* Extensive soft tissue injury compromises circulation and may produce injury to contiguous nerves. If the skin is violated at the site of fracture, a "compound wound" is produced with the probable introduction of infection. More stripping of periosteum produces more death of bone at the fracture site. All of these adversely affect healing which may not be apparent at the outset.

2. *Anatomic Location:* The cancellous bone at the metaphysis as a rule heals more rapidly than the cortical bone of the shaft. A small flat bone, such as the rib, heals more rapidly than large tubular bones, like femur and tibia. The cancellous bone of the vertebral body when compressed heals rapidly because bone trabeculae are impacted.

3. *Type of Immobilization:* Fractures in different locations require different forms of immobilization. In some areas rigid immobilization is indicated. Here, very little organization and callus is produced. With compression of the fracture and rigid immobilization, actual intremembranous bone healing at the fracture ends have

been demonstrated. Where simple cast immobilization is utilized, usually a moderate amount of callus is present. Where no immobilization is used, a larger callus usually results and if excess motion occurs during the callus stage, nonunion and pseudarthrosis may develop.

4. *Age of the Patient:* As noted earlier, children have a remarkable ability both to heal fractures rapidly and to remodel them more completely. The periosteum in a child is thick and highly responsive to injuries. Much shorter periods of immobilization are generally necessary when treating the fractures of childhood.

5. *Disease Complication:* Pathologic fractures associated with tumors, Paget's disease, fibrous dysplasia, osteoporosis, radiation necrosis, osteomalacia and renal disease will not be discussed here. These obviously have an adverse effect on the healing of a fracture.

### Summary

The study of the healing fracture is fundamental to the treatment of all skeletal injuries. The specific treatment for an individual fracture should compliment the inherent ability of the extremity to restore itself to normal.



# ELECTROCARDIOGRAM



# OF THE MONTH

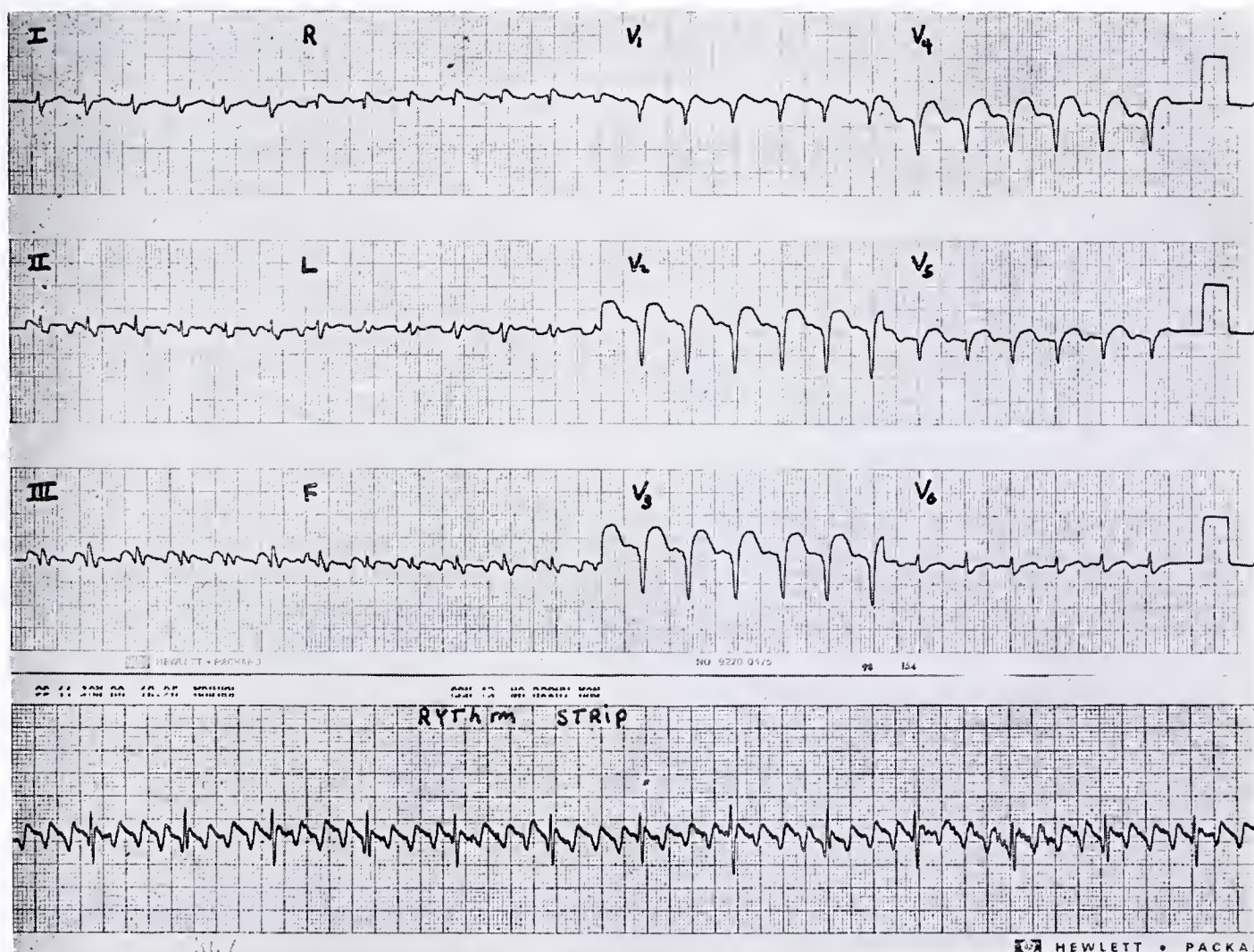
The Department of Cardiology, University of Arkansas College of Medicine

(See Answer on Page 413)

**HISTORY:** Mr. A. is a 55-year-old man who presented to the hospital because of substernal chest pain and palpitations. He had experienced myocardial infarction complicated by both ventricular and supra-ventricular rhythm disturbances one year previously. The patient takes Lanoxin 0.25 mgm. daily. His physical examination revealed pallor, hypotension, bibasilar rales, and a ventricular gallop. The patient's twelve lead ECG and a rhythm strip obtained during carotid massage are shown below.

Which of the following statements are true and which are false?

1. The patient is in a sinus mechanism.
2. He most of all needs urgent antiinflammatory therapy for pericarditis.
3. His ECG suggests anterior infarction.
4. Lidocaine should be given immediately.
5. Electrical cardioversion is indicated.



John W. Watson, M.D.  
 Assistant Professor  
 Division of Cardiology  
 University of Arkansas for Medical Sciences  
 4301 West Markham  
 Little Rock, Arkansas 72201





## "The Controlled Substances Act: Physician Alert!"

Don Phillips, R.Ph., M.P.A.\*

The Arkansas Controlled Substances Act (Act 590 of 1971, as amended) does not repeal the record-keeping requirements of the Arkansas Narcotic Drug Act and the Arkansas Drug Abuse Control Act. Countless inquiries directed to the Arkansas State Medical Board are indicative of the clouds surrounding this issue.

Arkansas Statutes Annotated 82-2601 is silent with regard to record-keeping by persons who administer controlled substances including narcotic, stimulant and depressant drugs. Since the Controlled Substances Act does not specifically repeal either the Narcotic Drug Act or the Drug Abuse Control Act, many people have falsely assumed they are no longer in effect.

The Arkansas Department of Health, Division of Drug Control, is responsible for curtailing the diversion of controlled drugs. Manufacturers, wholesalers, pharmacies, hospitals and physicians are required to keep records of drugs purchased, distributed, administered and dispensed. The maintenance of a closed system enables state agents to trace a controlled drug from the time it was manufactured to the time it was dispensed to the ultimate user.

The legal acts pertaining to controlled drugs are:

1. *21 CFR-Part 1304* requires that persons registered as handlers of Controlled Substances with the Drug Enforcement Administration, maintain records and inventories for at least two (2) years.
2. *Ark. Stat. Ann. 82-1009* requires that all persons shall keep records of narcotic drugs.
3. *Ark. Stat. Ann. 82-2107* requires that all persons shall keep records of stimulant and depressant drugs.
4. *Ark. Stat. Ann. 82-2618; 82-2625; 82-2626*

gives authority for inspection and enforcement to the Division of Drug Control, Arkansas Department of Health.

Accordingly, the Arkansas Supreme Court (in *Buck v. Steel*, 263 Ark. 249 - 1978) has held that where a later act does not specifically repeal an earlier act, and they are not in irreconcilable conflict, they should be construed together "so that meaning may be given to both acts." It is only where the two acts are in "direct conflict" that the later repeals a former by conflict.

Since the Controlled Substances Act makes no effort to provide for record-keeping by administering practitioners — nor for safekeeping of narcotic, stimulant and depressant drugs — it is clear that the Narcotic Act and the Drug Abuse Control Acts should continue to be applied except where specifically supplanted.

Physicians who regularly administer and dispense narcotics, stimulants, depressants and other controlled substances need to be aware of their legal responsibilities and the disciplinary actions that accompany enforcement. When patients are charged for controlled substances by a physician (either separately or together with other professional services) the physician must keep records of all such drugs received, administered and dispensed.

Legal requirements necessitate the maintenance of complete records of all stocks of controlled drugs on hand, including samples. All inventories and records of controlled substances must be maintained separately and in such form that they are readily retrievable from the ordinary professional and business records of the physician.

All records pertaining to controlled substances must be kept for a period of two years. Files are to be made available for inspection and copying

\*Administrator, Pharmacy Services, Arkansas Department of Health, 4815 West Markham, Little Rock, Arkansas 72201.

by duly authorized agents of the Division of Drug Control, Arkansas Department of Health. Any further questions concerning the state's record-keeping requirements can be directed to Don

Phillips, R.Ph., M.P.A., Administrator of Pharmacy Services, Arkansas Department of Health, 4815 West Markham, Little Rock, Arkansas 72201.



## Pediatric Review: Improved Survival with Aggressive Treatment Of Neonatal Jaundice

Dick Stevenson, M.D., E. S. Golladay, M.D., Donna Nash, R.N.\*

Neonatal jaundice is a common problem seen and treated by both pediatricians and family practitioners. The causes of neonatal jaundice are multiple (table 1). Fully 50% of the cases of

non-hemolytic neonatal jaundice are secondary to hepatitis. Biliary atresia accounts for an additional 25% of the cases while all other causes comprise the remaining 25%.<sup>1</sup> While surgery has no place in the treatment of intrinsic liver disease, a review of the current literature concerning biliary atresia reveals that early diagnosis and aggressive surgical therapy improves survival.<sup>2,3,4</sup>

This communication is to present the protocol of management of neonatal jaundice at the Arkansas Children's Hospital with specific reference to the treatment of non-correctable biliary atresia. Two illustrative cases are presented.

### CASE 1

A seven-week-old male infant was referred to the Arkansas Children's Hospital for evaluation of neonatal jaundice. Admission bilirubin was 15.06 milligrams per deciliter. Assessment by laboratory parameters revealed an obstructive jaundice. Rose Bengal excretion was negative. Abdominal exploration with operative cholangiography was performed confirming the diagnosis of biliary atresia. A Lilly-modification of the Kasai procedure was performed. Drainage of bile was apparent on the third postoperative day. This drainage gradually increased until a volume of 80 milliliters per day was reached. Two weeks after operation, serum bilirubin was 3.2 milligrams per deciliter. The patient was discharged on phenobarbital and sulfamethoxazole-trimethoprim combination antibiotic.

At three months of age, the patient was readmitted to the hospital with decreased biliary output, fever, leukocytosis, and increased irritability. A diagnosis of cholangitis was made. After

Table 1.

#### Causes of Neonatal Jaundice

##### HEMATOLOGIC

Rh Incompatibility  
ABO Incompatibility  
Congenital Spherocytosis  
Congenital non-Spherocytic Anemia  
METABOLIC/ENZYMATIC  
Physiologic jaundice of newborn  
Prematurity  
Glucuronyl transferase deficiency  
(Crigler-Najjar Synd)

Dehydration

Maternal Diabetes

Hypoxia

Pyloric Stenosis

Small Bowel Obstruction

Toxins

Dubin-Johnson Synd.

Rotor Synd.

Gilbert Synd.

Cystic Fibrosis

##### INFECTIOUS

Viral Sepsis

Protozoan Sepsis

Bacterial Sepsis

##### OBSTRUCTIVE

Biliary Atresia

Choledochal Cyst

Neonatal Hepatitis

\*Arkansas Children's Hospital, 804 Wolfe Street, Little Rock, Arkansas 72201.



five days of intravenous antibiotic therapy, the patient was afebrile and averaging 75 milliliters per day biliary output. He was therefore discharged.

One month later, the patient was readmitted with another episode of cholangitis. When ten days of intravenous antibiotics did not produce a reduction in serum bilirubin, curettage of the liver surface at the portoenterostomy was performed. The result was an increase in biliary output and reduction in serum bilirubin.

The patient has had one additional episode of cholangitis which responded to intravenous antibiotics. Therapy with oral vitamin K was instituted after evaluation of stomal bleeding showed a prolonged prothrombin time.

He is now eleven months of age and has not had an episode of cholangitis in five months. The most recent total bilirubin was 0.62 milligrams per deciliter with a direct component of 0.44 milligrams per deciliter. Clotting studies are normal.

## CASE 2

After an uncomplicated delivery and postnatal course, a female infant was noted to be jaundiced at age two months. Liver functions were abnormal but not diagnostic of obstructive biliary disease. As the patient was asymptomatic and growing normally, no further evaluation was performed.

At age eleven weeks, repeat evaluation showed further deterioration of liver enzymes and bilirubin. This finding prompted referral to a pediatrician who subsequently referred the patient to the Arkansas Children's Hospital for evaluation of jaundice and an abdominal mass.

Laboratory determinations were consistent with obstructive jaundice. Rose Bengal excretion was negative. Upper GI series suggested intestinal malrotation. Ultrasound did not reveal a choledochal cyst or evidence of dilated intrahepatic ducts.

Abdominal exploration at age 16 weeks revealed malrotation, situs inversis, and preduodenal portal vein. No extrahepatic biliary ducts were demonstrated on operative cholangiography. A Kasai portenterostomy with cutaneous enterostomy (Lilly modification) was performed for treatment of the biliary atresia. A Ladd procedure was performed for treatment of the intestinal malrotation.

The child recovered uneventfully from opera-

tion but was discharged with only minimal output from the biliary conduit.

One month later bilirubin determination showed direct bilirubin of 7.5 milligrams per deciliter with a total bilirubin of 14.3 milligrams per deciliter.

The patient subsequently developed massive ascites, increasing hepato splenomegaly, encephalopathy and died at age seven months of liver failure.

## DIAGNOSIS

If jaundice in the newborn does not resolve by one month of age, hospitalization and evaluation are indicated. Routine chemistries and liver function tests obtained on admission are frequently diagnostic of hematologic, enzymatic, or infectious disorders. Titers for infectious organisms including toxoplasmosis, rubella, cytomegalovirus, and herpes virus (TORCH titers) are included in the pre-operative evaluation, although recently the Center for Disease Control in Atlanta, Georgia, has required both acute and convalescent titers. If operative intervention were postponed until results of these tests were known, this requirement would delay surgical therapy beyond the critical time limit for acceptable surgical results. Exploration is frequently performed before the final results are known.

Alpha 1-antitrypsin levels are obtained to detect those patients with familial deficiency of this enzyme. The studies of Sharp et al show conclusively the association between neonatal cirrhosis and alpha 1-antitrypsin deficiency.<sup>5,6,7,8</sup> It is especially important to exclude this deficiency preoperatively because of the historically dismal record for operative intervention in these patients.<sup>2</sup>

Elevation of serum alpha fetoprotein levels above 35 micrograms/ml is suggestive of neonatal hepatitis while a level below 10 micrograms/ml suggests biliary atresia but neither of these values is definitive.<sup>9,10</sup>

Although not yet conclusively proven superior to the I<sup>131</sup> Rose Bengal excretion in the assessment of neonatal jaundice, the PIPIDA scan (p-isopropylacetaniliodominodiacetic acid) now used at the Arkansas Children's Hospital is the single most effective preoperative diagnostic tool.

The accuracy of this test, in which radioisotope is excreted by the biliary system and recorded in the duodenum, is 85-90%.<sup>11</sup> If no isotope enters.

the duodenum, the patient is prepared for abdominal exploration.

Further tests such as percutaneous liver biopsy and CAT scan may be suggestive of biliary obstruction as may other biochemical markers such as lipoprotein x, 5' nucleotidase, and serum bile acids; but the most reliable method for diagnosis of biliary atresia is operative cholangiography. Awaiting laboratory results prior to operative treatment may jeopardize clinical results.

Investigation is now underway concerning the reliability of duodenal aspirates in the diagnosis of biliary atresia as suggested by Hashimoto et al<sup>12</sup> and Greene et al.<sup>13</sup> Our experience with this test is limited to three cases.

Prior to operation, an upper gastrointestinal series is performed to identify the 10-15% of patients whose biliary atresia is a component of the Congenital Polysplenia Complex (preduodenal portal vein, situs inversus, malrotation, and congenital heart disease).<sup>14, 15, 16</sup> Preoperative knowledge of this complex would provide valuable anatomic information which could alter the surgical approach to the biliary structures.

An ultrasound of the liver and porta hepatitis is obtained to evaluate for Caroli's Disease and choledochal cyst.

On exploration of the abdomen an operative cholangiogram is obtained by placing a small-caliber catheter into the gallbladder. If the gallbladder has no lumen, the hepatoduodenal ligament is explored until a structure suitable for performance of a cholangiogram is identified. When the cholangiogram reveals no extrahepatic biliary structures, the diagnosis of biliary atresia is confirmed. A liver biopsy is obtained for verification of this disorder and for future assessment of the progression of cirrhosis. Surgical correction using Lilly's modification of the Kasai procedure is then performed.<sup>4</sup>

If a dilated or normal-sized duct is found in the upper hepatoduodenal ligament and if no lumen is demonstrated to enter the duodenum on operative cholangiogram, a choledochoduodenostomy or Roux-en-y choledochojejunostomy is performed.

If, on the other hand, the cholangiogram reveals the presence of intrahepatic and extrahepatic biliary ducts which are underdeveloped (figure 1A), a polyethylene catheter is sutured into stable position in the gallbladder before closing the

abdomen since progression of sclerosis of the ducts is well known. A repeat cholangiogram is then performed at three and six weeks. Progression of ductal obliteration is an indication for prompt re-exploration and treatment appropriate for biliary atresia. Should the cholangiogram show improvement in ductal size or no change in the six week interval, the catheter is removed.

In the rare instance when the cholangiogram reveals normal extrahepatic and intrahepatic biliary structures (figure 1B), the abdomen is closed with the knowledge that no potentially correctable defect has been overlooked. Operative liver biopsy by the wedge technique is usually definitive for final diagnostic purposes in these instances.

## DETAILS OF OPERATION

The technical aspects of the Kasai portoenter-

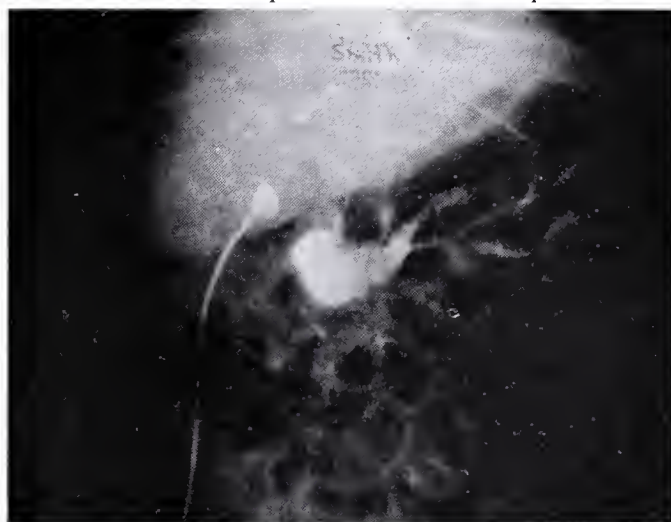


Figure 1A.

Operative cholangiogram depicting biliary hypoplasia manifest by minuscule ductal structures with ductal patency and flow into the duodenum.

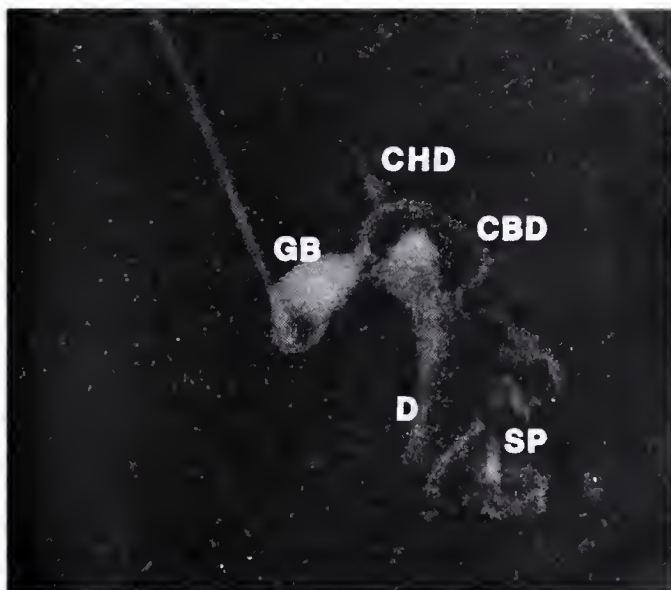


Figure 1B.

Intraoperative cholangiogram in an infant with neonatal hepatitis showing ductal structures of normal size with flow into the duodenum. GB—gallbladder; CHD—common hepatic duct; CBD—common bile duct; D—duodenum; SP—sponge.



ostomy have been well described elsewhere and are not the purpose of this communication.<sup>17,18</sup>

Our maneuvers for achieving a functional bilioenteric anastomosis are as follows:

1. high transection of the extrahepatic duct remnant at the liver hilus
2. anastomosis of the transected duct remnant to a defunctionalized limb of a Roux-en-y jejunojejunostomy

For biliary drainage to occur, the anastomosis must be made at the portal level as described by Kimura et al.<sup>19</sup>

3. exteriorization of the defunctionalized limb as a Mikulicz double-barreled enterostomy, usually in the left upper quadrant of the abdomen.

Progressive enlargement of the liver in cases of operative failure might encroach on the enterostomy if it is placed in the right upper quadrant.

Exteriorization of the biliary jejunal conduit is designed to decrease both the frequency and severity of postoperative cholangitis by preventing reflux of intestinal contents up to the anastomosis at the liver. In addition, the enterostomy allows accurate daily monitoring of biliary output. A decrease in biliary output is frequently an indication of impending cholangitis.

Hirsig in Switzerland suggests that preservation of lymphatics in the hepatoduodenal ligament as well as construction of a hepato-porto-omentopexy reduces the incidence of postoperative cholangitis. We utilize this technique.<sup>20</sup>

Extrascapular closure of the enterostomy is not performed for two to three years after the Kasai procedure at which point the incidence of cholangitis decreases. Stomal problems or progression of liver disease with the inherent complications of liver failure may necessitate early closure.

## POST-OP MANAGEMENT

After operation our patients are maintained on phenobarbital for purposes of inducing hepatic enzymes. A sulfamethoxazole-trimethoprim combination antibiotic is administered daily to suppress bacterial growth in the bilioenteric conduit.<sup>21</sup>

Nutritional support includes a high-calorie formula containing medium chain triglycerides which are absorbed directly into the portal venous circulation. This formula allows triglyceride intake which would be impossible otherwise because

of biliary diversion. Supplementary vitamins A, D, and K in water-miscible form are given.

When bile drainage exceeds 100 milliliters daily, electrolyte losses must be replaced. Acute dehydration and electrolyte aberrations result if no such replacement is given. At Arkansas Children's Hospital, replacement is accomplished with Shohl's solution, an electrolyte-rich solution of sodium citrate and citric acid. Lilly has described refeeding bile salts into the distal conduit of a double-barreled enterostomy.<sup>22</sup> We have had no experience with this technique although such a practice is certainly feasible.

## DISCUSSION

Biliary atresia has an incidence of one in 25,000 live births<sup>22</sup> and has not been noted to have familial transmission although a few cases have been recorded in the same family.<sup>23</sup> This incidence implies that approximately one or two cases occur each year in Arkansas. Despite the generally poor prognosis of biliary atresia, surgical treatment has made significant advances in the last decade.

The first successful therapy for biliary atresia was reported by Dr. Ladd of Boston in 1935.<sup>24</sup> Indeed this patient survived 40 years. Despite this success and the recommendation of early diagnostic laparotomy by Clatworthy and McDonald in 1956,<sup>25</sup> survival in biliary atresia remained so poor that Thaler and Gellis in 1968 condemned diagnostic laparotomy on the grounds that very few patients with biliary atresia survived.<sup>26</sup> They further stated that patients with unrecognized neonatal hepatitis underwent unnecessary procedures with the accompanying, albeit rare, mortality. Further analysis has shown many of the fatal cases were secondary to alpha 1-antitrypsin deficiency.<sup>8,27</sup>

But also in 1968, Morio Kasai<sup>28</sup> of Japan published his results on fifty-three patients with "uncorrectable" biliary atresia treated with the portoenterostomy in which a defunctionalized loop of small bowel is anastomosed to the liver at the level of the porta hepatitis (figure 2). Subsequently known as the Kasai procedure, this method of treatment first showed that survival with jaundice free existence was possible in "uncorrectable" biliary atresia. The basis of this procedure is the presence of miniscule biliary ductules at the porta hepatitis in the scarred non-patent bile duct. These ductules communicate with the intrahepatic biliary system.

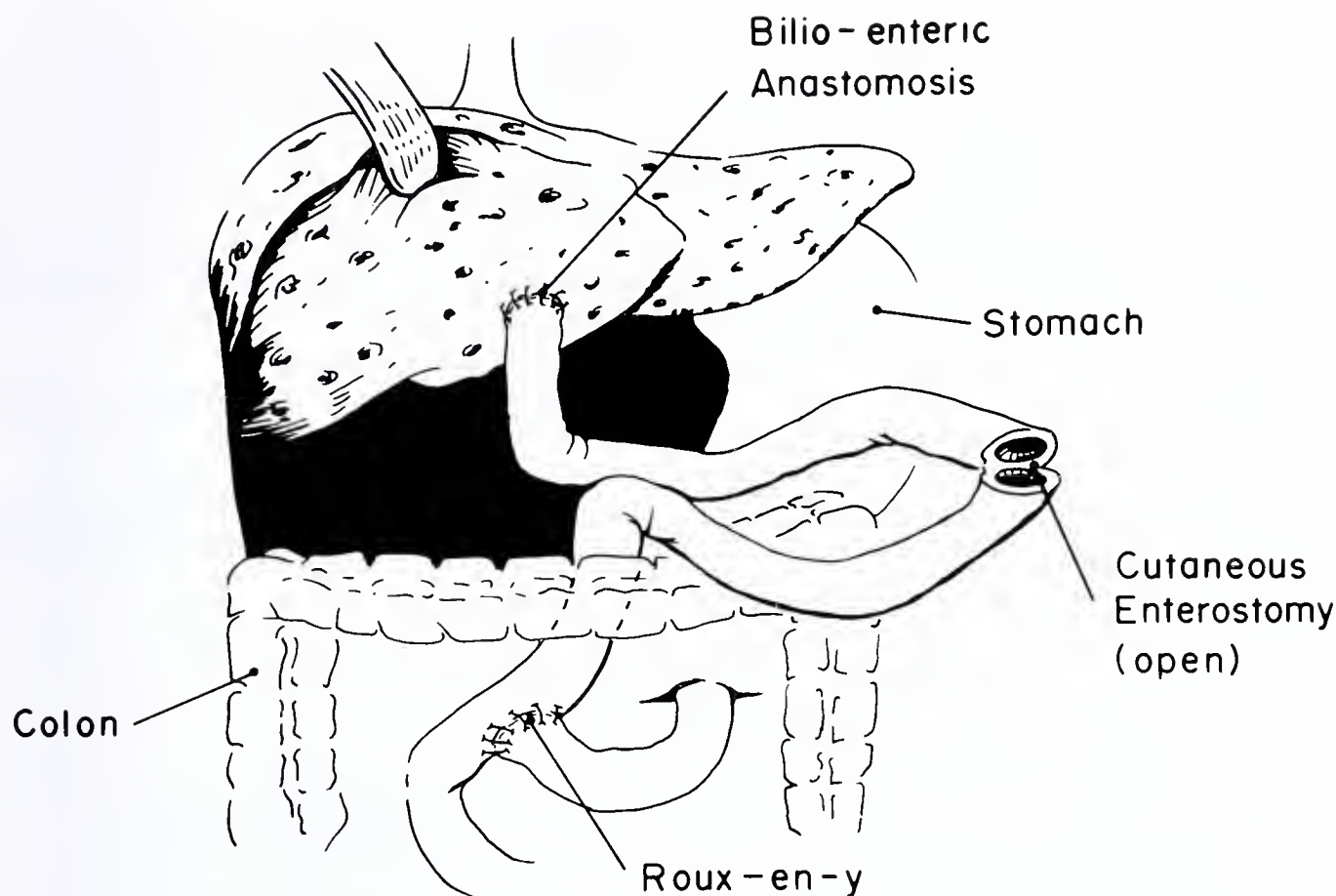


Figure 2.

Diagrammatic representation of the Kasai procedure (bilioenteric anastomosis) with the Lilly modification (Mikulicz double-barreled cutaneous enterostomy) which is utilized at Arkansas Children's Hospital in the treatment of biliary atresia.

The work of Kasai in Japan, Lilly at the University of Colorado, and multiple other authors has shown that the presence of these communicating ductules at the porta hepatis is definitely a function of age. When surgical correction is performed before 60 days of age, biliary drainage is established in 88% of the cases. This percentage falls to 20% in cases of biliary atresia undergoing a Kasai procedure between 90 and 120 days.<sup>4</sup> Relief of jaundice is obtained in 40% of patients operated upon before three months of age and in only 7% of infants operated on after three months of age.<sup>2,9</sup> Beyond 120 days of age, no biliary drainage is established with the Kasai procedure.<sup>4</sup> The average life span is similar when one compares those patients undergoing the Kasai procedure for biliary atresia in whom biliary drainage was not established with those patients with biliary atresia in whom no attempt at biliary drainage was made.<sup>2,3</sup>

The improvements in anesthetic and surgical techniques as well as better preoperative differentiation has all but eliminated the operative mortality from exploration of unrecognized neonatal hepatitis. Although time will eventually differentiate biliary atresia from neonatal hepa-

titis, the delay will create a majority of unsalvageable patients in the biliary atresia complex. Indeed the risk of minimal morbidity from an operative cholangiogram and liver biopsy in a patient with neonatal hepatitis is certainly justified when considering the consequences of delayed surgical intervention in biliary atresia. Therefore, aggressive diagnosis and prompt surgical therapy is mandatory for optimum results.

Emphasis should be placed on the fact that achievement of bile drainage does not equate with cure nor even necessarily with longevity. Despite relief of jaundice, a subgroup of patients develop manifestations of progressive intrahepatic disease including increasing hepatosplenomegaly and ascites. Death from hepatic failure usually occurs within one year.

However, the majority of patients with sustained biliary drainage appear to stabilize in about one year. Lilly has reported marked improvement in the histology of liver biopsies done one and one-half to two years after operation as compared with operative biopsies.<sup>4</sup> Alagille and Kasai have both reported continuing improvement of liver function in patients surviving more than two years.<sup>3,4</sup> Nevertheless, most patients are



left with some degree of permanent liver damage. It is unknown at present to what extent these children will be able to live a normal life.

At Arkansas Children's Hospital in the last two and one-half years, eight cases of biliary atresia have been diagnosed and treated surgically. Bile flow has been established in all cases. Four out of eight have succumbed to progressive liver disease. Three out of eight are living relatively normal lives. One patient is awaiting liver transplantation.

These results compare favorably with those of Lilly.<sup>4</sup> Of 28 patients Lilly established bile flow in 15. In 5 out of these 15 patients, progressive liver disease developed with 4 deaths in one year.

## SUMMARY

Persistent neonatal jaundice at the age of four weeks requires hospitalization and evaluation. If the diagnosis of a hematologic, enzymatic, metabolic, or infectious disorder is not made after obtaining liver function studies, a PIPIDA scan (or equivalent) should be performed while awaiting the results of TORCH titers, alpha fetoprotein levels, and alpha 1-antitrypsin levels. Failure of isotope to enter the small bowel is a pure indication for exploratory laparotomy and operative cholangiography. A brief outline of our evaluation is presented in figure 3.

When the proper surgical therapy for biliary atresia is performed prior to 60 days of age, biliary

## DIAGNOSIS AND TREATMENT OF BILIARY ATRESIA

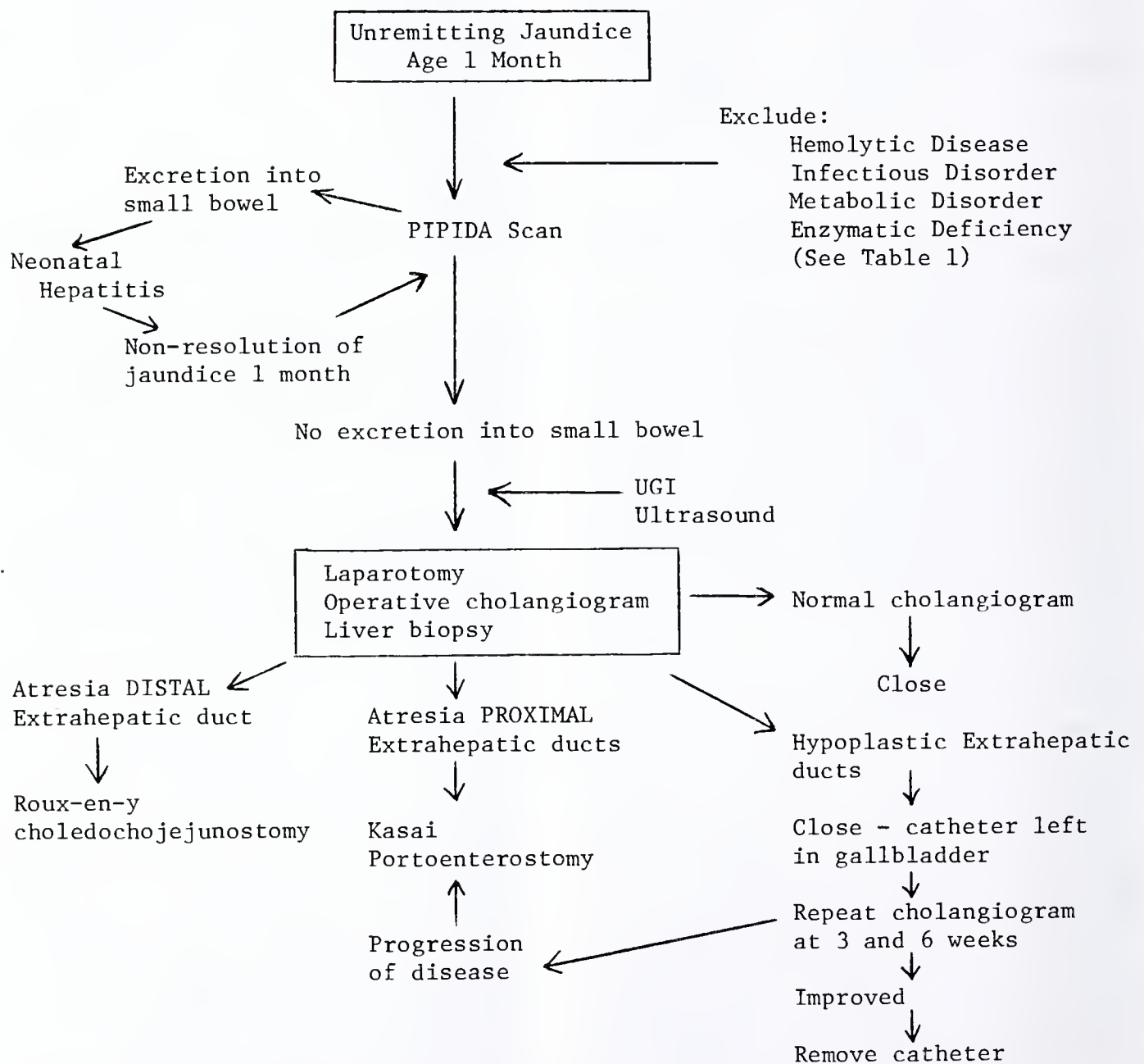


Figure 3.

Outline of management of neonatal jaundice. If PIPIDA scan shows no excretion of isotope into the small bowel, operative cholangiography is performed.

drainage is established in 88% of cases. When operation is delayed beyond this period this percentage is reduced approximately 1% per day.

The purpose of this communication is to familiarize the primary care physician with the surgical advances in the treatment of biliary atresia which have been afforded by prompt diagnosis and modern operative intervention.

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## EDITORIAL

# Monoclonal Gammopathies

Alfred Kahn, Jr., M.D.

The biochemistry of medicine starts in the investigative laboratories and filters down gradually to the practicing physician. Multiple myeloma was originally purely a cytologic diagnosis. With increasing knowledge it is now known to have interesting chemical and immunologic characteristics — and of equal importance, it has been shown to be one member of a “family of disease” characterized as monoclonal gammopathies which include solitary plasmacytoma, Waldenstrom’s macroglobulinemia, some types of lymphamia, heavy chain disease, primary amyloidosis, etc. There is an excellent review of this topic by Kyle and Greipp (Mayo Clinic Proc., Vol. 53, page 719, November, 1978).

The authors explain that proteins have moved where they are in place in an electric field in an appropriate suspension. The electrophoretic movement toward the anode and cathode can be divided into waves corresponding to certain underlying differences in the protein. The gamma wave is also known as the immune globulins. There are five types of immune globulins; if immune globulin is all of one type it is called monoclonal or having derived from one cell type — or it can be polyclonal meaning from several clones (families) and thus a mixture of protein is present. The monoclonal protein is made up of two heavy chain polypeptides and two light chain polypeptides. The normal immunoglobulins have names IgG, IgA, IgM, IgD, and IgE.

The authors state that monoclonal proteins are not abnormal but probably represent selective increases of normal immunoglobulins; they seem to be an overproduction phenomena. The monoclonal gammopathies appear to be the product of neoplastic disease in many cases — a particular family of plasma cells grows without restraint and releases a gamma globulin distinctive for that clone (family).

Kyle and Greipp state that in healthy individuals plasma cells release heavy chains; they also release light chains in excess. It is said that in myeloma, there is excess light chain and no heavy chains may be released. Conversely heavy chain may be produced in excess.

Kyle and Greipp have reviewed the many laboratory means of studying and diagnosing monoclonal proteins. Serum protein electrophoresis is the most widely used method of study. The gamma globulins are near the anode. If there is a broad spike in the gamma region it suggests a polyclonal gammopathy; if it is a narrow spike it suggests a monoclonal gammopathy. Small protein peaks can be hidden by other proteins at times. They recommend immunoelectrophoresis for identification of monoclonal proteins and for identifying the classification of heavy chain and light chain type. Monoclonal proteins may occur outside the gamma band. They recommend quantitation of immunoglobulins, immunofixation and serum viscometry. The urine can be studied for abnormal proteins or normal proteins in abnormal amounts.

Kyle and Griep have classified the gammopathies into an understandable workable outline. There are two main divisions; the first is malignant monoclonal gammopathies including multiple myeloma and its variations, malignant lymphoproliferative disease as Waldenstrom’s disease and lymphoma, heavy chain disease and amyloidosis. The second main division is monoclonal gammopathies of undetermined significance including benign disorders, gammopathies associated with non-myeloma type cells, biclonal gammopathy and acquired Fanconi Syndrome.

Of particular interest is the so-called heavy chain disease which is a disorder that has a predominance of heavy chains in the blood or urine.

The heavy chain can be of the gamma, alpha, or mu variety. The gamma type is said to be lymphoma-like and progressive. The alpha type is associated with malabsorption diarrhea, and infiltration of the gut with lymphocytes and plasma cells. Mu disease is seen in lymphomas occasionally but more often in chronic lymphatic leukemia.

One should be cautious in establishing a diagnosis of multiple myeloma from Bence-Jones

proteinuria. There are benign cases of light chain proteinuria according to Kyle and Greipp.

This review by Kyle and Greipp should have broad appeal as these disorders of gamma globulin touch on many fields including general practice, interned medicine, surgery and radiology. A correct diagnosis is a prerequisite to appropriate treatment — and an erroneous diagnosis can lead to injury to the patient as well as unnecessary expense.



## OBITUARY

### Dr. Nolan F. Beverly

Dr. Nolan F. Beverly of Little Rock died January 7, 1980. He was born June 26, 1926, in Stuttgart, Arkansas.

Dr. Beverly attended Stuttgart High School and received his medical degree from the University of Arkansas College of Medicine in 1955.

Dr. Beverly had practiced Anesthesiology in Little Rock.

He is survived by three sons.

### Dr. George B. Talbot

Dr. George B. Talbot, a native of Pine Bluff, died Tuesday, February 5, 1980. Dr. Talbot was born November 20, 1911. After graduating from Hendrix College in Conway and the University of Arkansas College of Medicine, he served his internship at Santa Rosa Hospital in San Antonio, Texas. He was a veteran of World War II.

Dr. Talbot had practiced in Pine Bluff since 1945. He founded the Doctors Clinic at Pine Bluff in 1953.

He is survived by his wife, Helen Downie Talbot, two sons and one daughter.

### Dr. John P. Thompson

Dr. John P. Thompson of Benton died January 17, 1980. He was born in Curtis, Arkansas, on October 15, 1915.

Dr. Thompson attended Henderson State College and was graduated from the University of

Arkansas College of Medicine in 1948. He interned at Missouri Pacific Hospital in Little Rock. Dr. Thompson was in general practice at Bearden for eleven years and then took residency training in Psychiatry at the Arkansas State Hospital. He had practiced Psychiatry at the Benton Services Center since 1964. Dr. Thompson had been a member of the Caduceus Club and a past member of the Lions Club.

Dr. Thompson is survived by his wife, Mrs. Cleo Terry Thompson, one son, one stepson and one stepdaughter.



### ANSWER—Electrocardiogram of the Month

**DISCUSSION:** The ECG shows a narrow QRS regular tachycardia with a ventricular rate of 150/minute. The rhythm strip reveals an atrial rate of 300/minute, hence the patient has 2:1 AV conduction. The trace is noteworthy for its Q-waves of marginal significance in II, III and AVF and for its QS complexes with ST elevation in V1-V5. The anterior changes are most likely secondary to infarction of undetermined age. A ventricular aneurysm cannot be excluded. Because of the patient's symptomatic state, most physicians would elect to move rapidly in the treatment of this rhythm disturbance and many would choose electrical cardioversion. Rapid atrial pacing would also be good treatment. This particular patient initially had rapid atrial pacing but could not be "paced out" of the rhythm disturbance and then had successful electrical cardioversion. In summary, the trace shows atrial tachycardia with 2:1 conduction and changes most consistent with anterior infarction of indeterminate age. Choices 1., 2., and 4., are thus false.



# keeping up

## Category 1 Continuing Medical Education Programs Available in Arkansas

### **WORKSHOP ON PSYCHOTHERAPEUTIC INTERVENTION: PROVOCATIVE THERAPY AND FAMILY SYSTEMS**

Presented by Rusty Palmer, *March 22nd and 23rd, 9:00 a.m. to 5:00 p.m.*, Room E155, Education Wing, St. Vincent Infirmary, Little Rock. Twelve hours Category I credit. Registration fee \$75.

### **ENDOMETRIOSIS: CURRENT CONCEPTS IN MANAGEMENT**

Presented by W. Paul Dmowski, M.D., Ph.D., Department of Obstetrics and Gynecology, University of Arkansas College of Medicine, *April 4th, 7:30 a.m. to 4:30 p.m.*, Camelot Inn, Little Rock. Six hours Category I credit. Registration fee \$50.

### **RELATIVE RISK OF ESTROGEN USE IN THE POST-MENOPAUSAL SYNDROME AND OSTEOPOROSIS**

Presented by Dr. Robert Anspaugh, *April 10, 7:30 p.m. to 9:30 p.m.*, Sparks Regional Medical Center, Fort Smith. Two hours Category I credit. No registration fee. Sponsored by AHEC-Fort Smith.

### **OPHTHALMOLOGY AND OTOLARYNGOLOGY FOR THE FAMILY PHYSICIAN**

Presented by Ben N. Saltzman, M.D., *April 12, 8:30 a.m. to 5:00 p.m.*, UAMS Campus, Education II Building, Room G141 A&B. Six and one-half hours Category I credit. Registration fee \$35.

### **MACULA DISORDERS**

Presented by Dr. Dean Burgess, Assistant Professor of Ophthalmology, Washington University, St. Louis, Missouri, *April 22, 9:00 to 12:00 noon*, Arlington Hotel, Hot Springs. Three hours Category I credit. Fee approximately \$25.

### **MID-CENTRAL STATES ORTHOPAEDIC ANNUAL MEETING**

Presented by Alfred B. Hathcock, M.D., *May 1st, 2nd, and 3rd*, Indian Rock Resort, Fairfield Bay. Ten hours Category I credit. Registration fee undetermined at this time. Sponsored by UAMS.

### **LARYNGECTOMY REHABILITATION**

Presented by Kathleen B. Wesson, M.A., *May 8-9, 8:00 a.m. to 4:30 p.m.*, UAMS Campus, Education II Building, Room G137. Hours of credit and registration fee unknown at this time.

### **RECURRING EDUCATION PROGRAMS**

Unless otherwise indicated, programs are for one to one and one-half hours Category I credit.

#### **FAYETTEVILLE — AHEC-NW**

*Medicine — Family Practice Teaching Conference*, 7:30 a.m. each Saturday, Washington Regional Medical Center.

#### **FAYETTEVILLE — VA MEDICAL CENTER**

*Radiology Conference*, April 1st and 16th and May 5th and 21st, 3:00 p.m., Conference Room.

*Pathology Conference*, April 15th and May 8th, 3:00 p.m., Conference Room.

*Mortality Conference*, April 10th and May 8th, 3:00 p.m., Conference Room.

*Renal Conference*, April (check for date and time).

*Cardiology Conference*, May (check for date and time).

#### **LITTLE ROCK — BAPTIST MEDICAL CENTER**

*Pulmonary Care Conference*, each Tuesday, 12:00 noon to 1:00 p.m., Conference Room #4.

Central Arkansas Primary Care Conference, second Tuesday, 7:00 p.m. to 9:00 p.m., Auditorium. Two hours Category I credit.

*Cardiopulmonary Resuscitation Course*, second Wednesday, 6:00 p.m. to 12:00 p.m., Human Resource Development Area. Six hours Category I credit.

*Morbidity and Mortality Conference*, first Thursday, 8:00 a.m. to 9:00 a.m., Conference Room #1.

*Surgery Conference*, each Thursday except first Thursday, 8:00 a.m. to 9:00 a.m., Conference Room #1.

As organizations accredited for continuing medical education by the Liaison Committee on Continuing Medical Education, the organizations named certify that these continuing medical education activities meet the criteria for the credit hours specified in Category I of the Physician's Recognition Award of the American Medical Association.

**LITTLE ROCK — ST. VINCENT INFIRMARY**

*Interhospital GI Problems Conference*, first Monday, 6:00 p.m. to 7:30 p.m., Room E155, Education Wing.  
*Peripheral Vascular Disease Conference*, second Monday, 6:00 p.m. to 7:00 p.m., Room E155, Education Wing.  
*Pediatric Conference*, each Monday, 12:30 p.m. to 1:30 p.m., Room E159, Education Wing.  
*Interhospital Urology Grand Rounds*, first Tuesday, 5:30 p.m. to 6:30 p.m., Room E159, Education Wing.  
*Neuropathology Conference*, third Tuesday, 5:00 p.m. to 6:00 p.m., Room S1169, Laboratory.  
*Pulmonary Conference*, first and third Thursday, 12:00 noon to 1:00 p.m., Room E159, Education Wing.  
*Cleft Palate Conference*, April 16th, 12:30 p.m., Room E159, Education Wing.

**LITTLE ROCK — UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES**

*Internal Medicine Grand Rounds*, each Thursday, 8:00 a.m. to 9:00 a.m., Education 1 Auditorium.



**P E R S O N A L   A N D   N E W S   I T E M S**

**Dr. Wells Honored**

Dr. John Wells of Fort Smith was guest of honor at a January luncheon recognizing his year as Chief of Staff at St. Edward Mercy Medical Center.

Dr. Hugh Lewing will hold the position as Chief of Staff at the Medical Center in 1980.

**Physicians Locate**

Drs. Daniel and Helga Chock have begun practice at 503 South College Street in Mountain Home.

**Dr. Sellars Elected Chief**

Dr. J. R. Sellars of Paragould will serve as the 1980 Chief of Staff at the Community Methodist Hospital. Other officers include: Dr. M. P. Hazzard, Vice Chief of Staff; and Dr. Bennie Mitchell, Secretary.

**Ouachita Memorial Hospital**

**Staff Officers Announced**

The staff officers for Ouachita Memorial Hospital in Hot Springs for 1980 are: Dr. John Simpson, Chief of Staff; Dr. Louis R. McFarland, Vice Chief of Staff; Dr. Thomas Wallace, Secretary. Dr. George Fotioo is Chief of Medicine; Drs. John Brunner, Ronald Bracken, Robert Aspell, Ron Kaler and John Trieschmann are serving as committee chairmen.

**Physician Named Diplomate**

Dr. Robert B. White of Paragould has been named a Diplomate of the American Board of Internal Medicine.

**Dr. Hayes Speaks**

Dr. J. Harry Hayes, Jr., of Little Rock participated in a series of skin care programs at the Hot Springs YWCA. Dr. Hayes presented information regarding cosmetic surgery.

**Dr. Mitchell Named to Board of Directors**

Dr. George K. Mitchell, President of Arkansas Blue Cross and Blue Shield in Little Rock, was elected to the Board of Directors of the National Blue Cross Association at their annual meeting held in Washington in December.

**Dr. Aston Elected Chief of Staff**

Dr. Ken Aston of Jonesboro has been elected Chief of Staff at Craighead Memorial Hospital. Other staff officers are: Dr. Robert Piat, Vice Chief of Staff; Dr. Don Kroe, Secretary-Treasurer. Dr. John Baldridge will be serving as Chief of Medicine; Dr. Michael Tedder will be serving as Chief of Obstetrics and Dr. Piat as Chief of Surgery.

**Hospital Staff Elections**

Dr. Walter G. Klugh, Hot Springs, is president of St. Joseph's Mercy Medical Center's Medical Staff for 1980. Other officers are: Dr. Robert L. Hill, vice president and president-elect; Dr. George J. Fotioo, secretary; Dr. Edwin L. Harper, chairman of surgery; and Dr. K. K. Jayaraman, chairman of medicine.

**Ophthalmologist Speaks to  
Diabetes Association**

Dr. J. Y. Massey of Mountain Home spoke at



a recent meeting of The Twin Lakes Chapter of the American Diabetic Association. Dr. Massey spoke on diabetes and eye problems.

#### Springdale Honors Physician

Dr. J. W. Dorman of Springdale was presented the Distinguished Citizen Award by the Springdale Chamber of Commerce on January 28, 1980.

Dr. Dorman, who was in general practice in Springdale for thirty years, was the first chief of staff at Springdale Memorial Hospital. He is a past president of the Washington County Medical Society and the Springdale School Board and a past chairman of the State Board of Health.



#### MARCH 1980

##### MARCH 27

Dr. Masauki Hara Lecture. 4:00 p.m. in the Education II Building, Room G-131, University of Arkansas Medical Sciences Campus. Speaker will be Dr. Ward O. Griffen, professor and chairman, Department of Surgery, University of Kentucky Medical Center.

##### MARCH 28-29

The Arkansas Chapter of the American College of Surgeons will hold its spring meeting at the Velda Rose Hotel, Hot Springs. For further information, contact: Larry Lawson, M.D., at 239-5916.

#### APRIL 1980

##### APRIL 10-12

Liver Disease Update. Sponsored by the University of Mississippi School of Medicine and the American College of Gastroenterology. Holiday Inn Downtown, Jackson, Mississippi.

This course meets the criteria for 14.5 credit hours, Category I of the Physician's Recognition Award, AMA. The fee is \$150.

For more information, contact: The Division of Continuing Health Professional Education, University of Mississippi Medical Center, 2500 North State Street, Jackson, Mississippi 39216, phone (601) 987-4914.

##### APRIL 20-23

The *Annual Session of the Arkansas Medical Society* will be held at the Arlington Hotel in Hot Springs. This year's program theme will be

"Recent Advances in Oncology." See convention section of this issue for program information.

##### APRIL 24-26

Update in High Risk Pregnancy Management. Sponsored by the Department of Obstetrics and Gynecology of the University of Louisville. Hyatt Regency Hotel in Louisville, Kentucky.

For further information, contact J. Patrick Lavery, M.D., Program Director, Division, Maternal-Fetal Medicine, University of Louisville School of Medicine, Post Office Box 35260, Louisville, Kentucky 40232.

#### MAY 1980

##### MAY 1-3

Mid Central States Orthopaedic Society will hold a meeting at Indian Rock Resort in Fairfield Bay, Arkansas. Dr. Benjamin Bierbaum of Boston and Dr. Andrew Brooker of Baltimore will be guest lecturers at a bioskills program. Dr. Eugene Binet will lecture on "Newer Orthopaedic Procedures in Orthopaedic Radiology."

For further information, contact Peter J. Irwin, M.D., at 1500 Dodson, Fort Smith, Arkansas 72901, phone 782-2071.

##### MAY 6-10

The Use of ASIF/AO Small Fragment Set in Hand Surgery: Principles and Techniques. Sponsored by the University of Mississippi Medical Center, Gulf Hills Inn, Ocean Springs, Mississippi.

The course fee is \$500. 20 Category I credit hours, AMA.

For more information, contact: The Division of Continuing Health Professional Education, University of Mississippi Medical Center, 2500 North State Street, Jackson, Mississippi 39216, or phone (601) 987-4914.

##### MAY 15-18

The American Society of Internal Medicine

will hold its 24th Annual Meeting at the Hyatt Regency Hotel in Washington, D.C. This year's theme will be: "Ages, Wages, and Ethics: An Agenda for the 80's."

For more information, contact: American Society of Internal Medicine, 2550 "M" Street, NW, Suite 620, Washington, D.C. 20037.

#### MAY 21-23

The Department of Family Medicine of the University of Tennessee will sponsor the Fourth National Conference on Patient Education in the Primary Care Setting at the Hyatt Regency Hotel in Memphis, Tennessee.

For more information, contact: Donna Miller, Ph.D., 66 North Pauline, Suite 233, Memphis, Tennessee 38105.

#### MAY 28-30

"Present Concepts in Diagnostic Radiology." Sponsored by the Letterman Army Medical Center, Presidio of San Francisco, California.

The program is approved for up to 18 hours Category I credit. There is no registration fee.

For more information contact: Department of Radiology, Letterman Army Medical Center, at (415) 561-3828 or (415) 561-3761.

#### JUNE 1980

#### JUNE 19-21

The Arkansas Chapter of the American College of Surgeons will meet at the Red Apple Inn, Heber Springs, Arkansas. For further information, contact: Larry Lawson, M.D., One Medical Drive, Paragould 72450, phone 239-5916.



## RESOLUTIONS



#### Dr. Nolan F. Beverly

WHEREAS, the recent death of one of our members, Nolan F. Beverly, M.D., has caused us deepest sorrow; and

WHEREAS, Dr. Beverly had been a highly respected member for the past twenty-one years and had achieved an enviable reputation in the field of his chosen specialty; and

WHEREAS, the Society recognizes the loss to the medical community.

BE IT THEREFORE RESOLVED: THAT, this resolution be made a part of the permanent records of the Society, and

THAT, a copy of this resolution be forwarded to Dr. Beverly's family as an expression of our sincere sympathy; and

THAT, a copy of this resolution be forwarded to the Journal of the Arkansas Medical Society for publication.

By Direction of the Memorials Committee: T. Duel Brown, M.D., Chairman; Robert Watson, M.D.; Henry Hollenberg, M.D.

Adopted: Executive Committee, Pulaski County Medical Society, January 16, 1980.



## PROCEEDINGS OF SOCIETIES

#### YELL COUNTY

The Yell County Medical Society elected officers for 1980 at its January meeting. Dr. Walter P. Harris of Danville was named president; Dr. Jerry Hodges of Dardanelle, secretary-treasurer; and Dr. James Maupin, delegate to the Arkansas Medical Society.

The Yell County Medical Society passed the following resolution unanimously:

#### BE IT RESOLVED:

The Yell County Medical Society expresses its disapproval of the State Health Department's intruding upon the private practice of medicine by setting up satellite clinics throughout the State without any input whatsoever from physicians in the area involved. We feel that as proposed there will not be adequate medical supervision. These clinics, we feel, should be under the direct daily supervision of a qualified physician on the premises.





## NEW MEMBERS

The Baxter County Medical Society has added two active members to its roll:

### **Dr. Ray E. Stahl, Jr.**

Dr. Stahl was born in Erwin, Tennessee, and was graduated from Milligan College in Milligan, Tennessee, in 1970. He received his M.D. degree in 1973 from the University of Tennessee College of Medicine in Memphis. Dr. Stahl interned at City of Memphis Hospital. His surgical residency was at the University of Tennessee Affiliated Hospitals.

Dr. Stahl is in General Surgery practice at 402 East Sixth Street in Mountain Home.

### **Dr. E. Russell Webb**

Dr. Webb was born in Detroit, Michigan, and was graduated from Wayne State University in 1967. He received his M.D. degree in 1971 from the University of Michigan Medical School in Ann Arbor. Dr. Webb received his internship and residency training at William Beaumont Hospital in Royal Oak, Michigan. He served in the United States Army from 1976 to 1978.

Dr. Webb is board certified in Urology and is practicing at #10 Medical Plaza in Mountain Home.

The Benton County Medical Society has added three new members to its roll:

### **Dr. David C. Garrett, III**

Dr. Garrett is a native of Little Rock. He received his B.A. degree from Hendrix College in 1972 and his M.D. degree from the University of Arkansas College of Medicine in 1976. He served his internship and Family Practice residency at the University Medical Center.

Dr. Garrett practices at 1040 West Walnut, Rogers.

He is board certified in Family Practice and is a member of the American Academy of Family Physicians.

### **Dr. Neil D. Mullins**

Dr. Mullins was born in Clawson, Michigan, and graduated from the Andrews University at Berrien Springs, Michigan, with a B.A. degree in June 1958. He received his M.D. degree from the Facultad de Medicina de la Universidad Autonoma de Guadalajara, Mexico, in 1968. He served his internship at St. Mary's Hospital in Montreal, Quebec, Canada.

Dr. Mullins practiced medicine in Michigan and Texas before moving to Arkansas in December of 1976.

He is in Family Practice at 906 N.W. 8th, Bentonville.

### **Dr. Larry D. Wright**

Dr. Wright is a native of Hope. He attended the University of Arkansas at Fayetteville for one year and Hendrix College for three years for his pre-medical education. In June 1976 he received his M.D. degree from the University of Arkansas College of Medicine.

He served his internship and a two-year residency in Internal Medicine at the St. Louis University Hospitals. He also served a one-year residency in Geriatric Medicine at the Jewish Institute for Geriatric Care, New Hyde Park, New York.

Dr. Wright practices Internal Medicine and Geriatric Medicine at 1040 West Walnut, Rogers.

He is board eligible in Internal Medicine and is an associate member of the American College of Physicians.

### **Dr. George C. Garrett, Jr.**

The Hempstead County Medical Society has recently added the name of Dr. George C. Garrett, Jr., to its membership roll. Dr. Garrett, a native of Hope, has returned to practice Obstetrics and Gynecology at Hope Clinic.

Dr. Garrett received his B.A. at Hendrix College in Conway and graduated from the University of Arkansas College of Medicine in June 1975. He served his internship at the University of Arkansas Medical Center and took his residency at the Louisiana State University School of Medicine in Shreveport.

Dr. Garrett has recently taken the examination for board certification in his specialty. He is a member of the American College of Obstetricians and Gynecologists and the American College of Emergency Medicine.

### **Dr. Joel P. Cook**

Dr. Cook, a native of Crossett, has become a

member of the Jackson County Medical Society. He received a B.A. with honors from the University of Arkansas at Fayetteville in May 1973 and graduated from the University of Arkansas College of Medicine in 1978. He served his internship at St. Vincent Infirmary in Little Rock.

Dr. Cook practices General Medicine at Second and Laurel Streets in Newport.

**Dr. J. W. Maxwell**

Dr. Maxwell has recently been added to the membership roll of the Phillips County Medical Society. Dr. Maxwell is a native of Mississippi.

Dr. Maxwell received a B.S. degree from Tennessee Technical University at Cookeville, and received his Medical Degree from the University of Tennessee College of Medicine, Memphis, in 1959. He served his internship at the Holston Valley Hospital in Kingsport, Tennessee. His residency was served at Methodist Hospital in Memphis. From January 1964 until December 1965, Dr. Maxwell served in the United States Air Force. Following his release from the service, he practiced in Mobile, Alabama, until 1979. In March 1979, he moved to Helena to practice Radiology.

Dr. Maxwell is a board certified Radiologist and a member of the American College of Radiology, Radiological Society of North America and Southern Radiological Conference.

**Dr. Jararam D. Prasad**

Dr. Prasad is a new member of the St. Francis County Medical Society. He is a native of India.

Dr. Prasad completed his pre-university course at AUN College, Vizag, India. His medical degree was received in 1971 from Gunter Medical College, Andhra University, Gunter, Andhra. He served an internship at St. Vincent Hospital in Worcester, Massachusetts, from August 1974 until July 1975. He then spent one year in residency training at the same institution.

From September 1976 until September 1978, Dr. Prasad served with the United States Air Force at the base in Little Rock. Following his military service, Dr. Prasad returned to Worcester, Massachusetts, for further residency training at Worcester City Hospital. He located in Forrest City in September 1979.

Dr. Prasad is a member of the candidate group of the American Academy of Pediatrics. He is board eligible in his specialty.

Dr. Prasad practices Pediatrics at 328 Kittle Road in Forrest City.

Sebastian County Medical Society has added two new members to their roll.

**Dr. Stephen M. Parker**

Dr. Parker is a native of Fort Smith. He was graduated from the University of Arkansas in Fayetteville in 1972 with a B.A. degree. He received his medical degree in 1976 from the University of Arkansas College of Medicine in Little Rock. Dr. Parker interned at St. Vincent Infirmary and took residency in Internal Medicine at the University of Oklahoma in Tulsa.

Dr. Parker specializes in Internal Medicine. He is associated with Drs. Don Meador and T. A. Feild in a clinic at 3600 North "O" Street in Fort Smith.

**Dr. John K. Sigler**

Dr. Sigler is also a native of Fort Smith. He attended Hendrix for his pre-medical education.

Dr. Sigler was graduated from Tulane University School of Medicine at New Orleans in 1966 and served a surgical internship at Barnes Hospital in St. Louis.

In July 1967, Dr. Sigler began a residency in Orthopaedic Surgery at Barnes Hospital. In October 1967, he entered active duty with the United States Army. He served as a Captain from 1967 until 1969, with one year in Viet Nam and one year at Fitzsimmons Army Hospital in Denver. After his tour of duty with the Army, he returned to Barnes Hospital to complete his residency training in Orthopaedic Surgery. He was a Fellow in Hip Surgery at Columbia Presbyterian Hospital, New York, from July to December 1972. From January 1973 to July 1974, he practiced Orthopaedic Surgery with Holt-Krock Clinic in Fort Smith.

Dr. Sigler was a resident in Pathology at Presbyterian Medical Center in Denver from July 1974 to December 1977. In January 1978, he joined Drs. Koenig, Girkin, Davenport and Smith in the practice of Pathology at 922 Lexington Avenue in Fort Smith.

Dr. Sigler was certified by the American Board of Orthopaedic Surgery in 1974 and by the American Board of Pathology (Anatomic and Clinical Pathology) in 1978.



## NEW MEMBERS

### **Dr. Clark M. Baker, Jr.**

Dr. Baker is a new member of the Washington County Medical Society. He is a native of Little Rock and was graduated from Hendrix College in Conway in 1967 with a B.A. degree. He received his M.D. degree from the University of Arkansas College of Medicine in 1971. Dr. Baker interned at St. John's Hospital in Tulsa. He was a flight surgeon with the United States Navy from 1972 until 1974. He practiced for six months at Russellville in 1975.

Dr. Baker was in residency with the Department of Otolaryngology and Maxillofacial Surgery at the University of Tennessee from 1976 until 1979.

Dr. Baker is in ENT practice with the Ear-

Nose-Throat Clinic at 4255 Venetian Lane in Fayetteville.

### **Dr. William L. Berry**

The Yell County Medical Society has added Dr. Berry to its membership roll. He was born in Oklahoma City and received his pre-medical education from Arkansas Tech in 1971. He graduated from the University of Arkansas College of Medicine in 1975.

In 1978, he completed a residency in Radiology at the University of Arkansas College of Medicine. He then served for one year as a Radiology Instructor at the University of Arkansas.

Dr. Berry is in practice in Dardanelle.



# CONVENTION SECTION

## *Program For Annual Meeting*

April 20-23, 1980

Arlington Hotel

Hot Springs

Arkansas Medical Society



## CONVENTION OFFICIALS

CHAIRMAN: Richard Martin, M.D., Paragould

### PROGRAM COMMITTEE:

R. W. Ross, M.D., Fort Smith  
James A. Wellons, M.D., Little Rock  
George H. Collier, Jr., M.D., Paragould  
Charles A. Taylor, M.D., Batesville  
Thomas A. Bruce, M.D., Little Rock  
Neil H. Sims, M.D., Little Rock  
John H. Delamore, M.D., Fordyce  
Ken Lilly, M.D., Fort Smith  
Larry Lawson, M.D., Paragould

### DISTRICT HOSTS: THIRD COUNCILOR DISTRICT

L. J. P. Bell, M.D., Helena  
John Hestir, M.D., DeWitt

SCIENTIFIC EXHIBITS CHAIRMAN: Larry Lawson, M.D., Paragould

MEMORIAL SERVICE: L. J. P. Bell, M.D., Helena

## CONTINUING MEDICAL EDUCATION CREDIT

As an organization accredited for continuing medical education, the Arkansas Medical Society Committee on Scientific Program certifies that this continuing medical education activity meets the criteria for hour-for-hour credit in Category I of the Physician's Recognition Award of the American Medical Association.

\* \* \* \* \*

Program is acceptable for nine prescribed hours by the American Academy of Family Physicians.

# *General Information*

## **REGISTRATION**

The registration desk will be located in the mezzanine lobby area of the Arlington Hotel and will be open as follows:

Sunday,	April 20	8:00 a.m. to 5:00 p.m.
Monday,	April 21	8:00 a.m. to 5:00 p.m.
Tuesday,	April 22	8:00 a.m. to 5:00 p.m.
Wednesday,	April 23	8:00 a.m. to 11:00 a.m.

Registration cards and badges will be prepared in advance for the officers of the State Society and for the county society delegates. Delegates are requested to present credentials in proper form when registering.

All members and visitors are required to register, as admission to all sessions will be by badge only. Bring your 1980 membership card to facilitate registration.

There will be a \$5.00 registration fee for non-member physicians.

Tickets for the Tuesday night banquet may be purchased at the registration desk.

## **TELEPHONE SERVICE**

As a convenience to physicians in attendance at the meeting, arrangements have been made for telephone service at the Society convention registration desk. It is suggested that you give the following information to your office personnel so that you may be contacted in case of an emergency:

Arkansas Medical Society Convention Registration Desk telephone number (direct line) 623-9214.



## *Memorial Service*

A joint Society-Auxiliary Memorial Service will be held on Sunday, April 20, at 1:00 p.m. in the Arlington Hotel.

A. E. Andrews, M.D., President of the Society, will preside at the service and read the names of deceased members of the Society. Mrs. Frank E. Morgan, President of the Auxiliary, will read the names of deceased members of the Auxiliary.

## **IN MEMORIAM**

### **SOCIETY MEMBERS**

Dr. Nolan F. Beverly, Little Rock	Dr. Ernest A. Mendelsohn, Fort Smith
Dr. Millard W. Black, Little Rock	Dr. John H. McCurry, St. Louis
Dr. H. Ray H. Fulmer, Little Rock	Dr. R. O. Norris, Jonesboro
Dr. William L. Fulton, North Little Rock	Dr. Paul T. Stroud, Jonesboro
Dr. W. Mage Honeycutt, Little Rock	Dr. George B. Talbot, Pine Bluff
Dr. Walter G. Klugh, Hot Springs	Dr. John P. Thompson, Benton
Dr. Rustam A. Malik, Pine Bluff	Dr. H. B. White, Morrilton
	Dr. Eugene H. Wicker, Texarkana

### **AUXILIARY MEMBERS**

Mrs. William Abbott, Little Rock	Mrs. James Hawley, Camden
Mrs. A. J. Baker, Paragould	Mrs. A. C. Kolb, Little Rock
Mrs. E. O. Day, Hot Springs	Mrs. J. H. Scroggins, Little Rock
Mrs. L. G. Fincher, El Dorado	Mrs. John Wilson, Magnolia



Memorial Address: The Reverend Carlos Martin, First United Methodist Church,  
Hot Springs

*"Abide With Me"* ..... Charles E. Ives  
Dorothy L. Gray, Soprano                      Herman Hess, Accompanist

#### **COUNCIL RECEPTION**

The Council will host a reception for all members, spouses, and guests of the Society at 6:30 p.m. on Sunday, April 20, in the Arlington Hotel. This reception provides an opportunity for informal discussion with your officers and you are urged to attend.

#### **FIFTY YEAR CLUB LUNCHEON**

The Society will host a luncheon for members of the Fifty Year Club at 12:00 Noon on Monday, April 21, in the Arlington Hotel. Members of the Fifty Year Club may make reservations for the luncheon at the Society's convention registration desk.

Dr. Eva F. Dodge of Little Rock is president of the Fifty Year Club and Dr. G. Allen Robinson of Harrison is secretary.

The luncheon program will be:

1. "James Ewing"—Oncologist  
by G. Allen Robinson, M.D.
2. The "Pap Test"—Early History  
by Eva F. Dodge, M.D.
3. Members are invited to share interesting oncology cases they have had during their practice

#### **BLUE CROSS-BLUE SHIELD PARTY**

Arkansas Blue Cross-Blue Shield will host a cocktail party for members of the Society and their guests at 6:30 p.m. on Monday, April 21, in the Arlington Hotel.

#### **PRAYER BREAKFAST**

The Committee on Medicine and Religion will sponsor a Prayer Breakfast at 7:30 a.m. on Tuesday, April 22, for all Society and Auxiliary members and their guests. Dr. Ray Jouett of Little Rock will be the guest speaker. Tickets for the breakfast may be purchased at the Society registration desk.

#### **TUESDAY EVENING FUNCTIONS**

A cocktail party beginning at 6:00 p.m. in the North Parlor of the Arlington will precede the Inaugural Banquet on Tuesday evening.

The President's Inaugural Banquet will begin at 7:00 p.m. on Tuesday, April 22, in the Ballroom of the Arlington. A. E. Andrews, M.D., Texarkana, 1979-80 president, will be master of ceremonies. Kemal Kutait, M.D., of Fort Smith, will be installed as the 105th president of the Society.

#### **PAST PRESIDENTS' BREAKFAST**

The traditional breakfast for former presidents of the Arkansas Medical Society will be held at 7:30 a.m. on Wednesday, April 23, in the Arlington Hotel.



## *Scientific Exhibits*

Larry Lawson, M.D., Chairman of the Scientific Exhibits, has arranged a number of interesting scientific exhibits. Exhibits will be located in an area adjacent to the scientific lectures. All members are encouraged to visit the exhibits as they are an integral part of the scientific program.

The following exhibits will be on display:

"Genetic Problems in Pediatrics"

Dr. Florence Char, Little Rock

"Rhinoplasty"

Dr. James F. Kyser, Little Rock

"Head and Neck Prosthesis"

Mr. Jack Diner, Little Rock

"Bilateral Cleft Lip Repair"

Dr. Robert W. Seibert, Little Rock

"Blindness from Fireworks"

Dr. R. Sloan Wilson, Little Rock

"Cosmetic Surgery in an Out-Patient Center"

Dr. Ellery C. Gay, Jr., Little Rock

"Clinical Application of Cytogenetics"

Dr. Glen Baker, Little Rock

"Histochemistry: Colon Diagnostic Aids in Hematology"

Dr. Glen Baker, Little Rock

"Intraocular Lens"

Dr. F. Hampton Roy, Little Rock

"New Ciné Angiography of Congenital Heart Diseases at Arkansas Children's Hospital"

Dr. Michael Stennard, Little Rock

"Percutaneous Gallstone Removal"

Drs. Phillip Smith and Fayyaz Mirza, Little Rock

"Galactography"

Dr. Wilma Diner, Little Rock

"Newer Aspects of Pulmonary Function Testing"

Drs. James Adamson, Jr., Jerry Herron and Nancy Rector, Little Rock

"Carcinoma of the Colon"

Dr. Jacob Amir, Little Rock

"Treatment of Carcinoma of the Skin"

Dr. Spencer Albright, Fayetteville





## *Business Sessions*

### MEETINGS OF THE COUNCIL

The Council of the Arkansas Medical Society will meet as follows:

Sunday, April 20	10:00 a.m.
Monday, April 21	7:30 a.m.
Tuesday, April 22	7:30 a.m.
Wednesday, April 23	8:30 a.m.
Wednesday, April 23	Immediately following adjournment of the House of Delegates (brief re-organizational meeting and group photograph of new officers)

The voting members of the Council are: the councilors, the president, the first vice president, president-elect, secretary and treasurer. The speaker, vice speaker, and past presidents are members ex-officio without vote.

### HOUSE OF DELEGATES

The opening session of the House of Delegates of the Arkansas Medical Society will begin at 1:30 p.m. on Sunday, April 20, in Room "C" of the Conference Center on the Mezzanine floor of the Arlington Hotel. Speaker of the House of Delegates, Amail Chudy, M.D., will preside.

All items of business to be considered by the House must either be printed in the March issue of the Journal or submitted to the headquarters office in writing twenty days prior to the meeting. Any new business proposed during the sessions of the House must have a two-thirds vote of attending delegates for introduction.

Items of business will be referred by the Speaker of the House of Delegates to one of three reference committees. Open hearings on those items of business will be held by the reference committees following the session of the House. All members of the Society are welcome to attend the meetings of the reference committees and to express views on the various reports, resolutions, etc.

### AGENDA

#### FIRST MEETING, HOUSE OF DELEGATES

1:30 p.m., Sunday, April 20

1. Call to Order
2. Roll Call of Delegates
3. Report of Credentials Committee
4. Introduction of Guests
  - Mrs. John F. Vaughan, President-elect, American Medical Association Auxiliary
  - Mrs. Raymond Yow, President of the Southern Medical Association Auxiliary
  - Mrs. Frank E. Morgan, President, Arkansas Medical Society Auxiliary
  - Mrs. Warren Boop, President-elect, Arkansas Medical Society Auxiliary
5. Address by Robert Hunter, M.D., Sedro Woolley, Washington, President-elect, American Medical Association
6. Address by A. E. Andrews, M.D., Texarkana, President, Arkansas Medical Society
7. Adoption of minutes of 103rd Annual Session as published in the June 1979 issue of the Journal of the Arkansas Medical Society

8. Adoption of minutes of the special session of the House held November 18, 1979, as published in the January 1980 issue of the Journal of the Arkansas Medical Society
9. Old Business
  - A. Constitutional Revision

A. S. Koenig, Jr., M.D., Chairman of the Constitutional Revisions Committee, will present the following proposed amendment to the Constitution for the final reading:

Article VII, Council, Section 2, Composition of Council

The Council shall consist of the councilors, the president, first vice president, president-elect, secretary, treasurer, *and immediate past president*. The speaker and vice speaker of the House of Delegates and the past presidents shall be members ex-officio without votes; *the immediate past president shall have a vote*. There shall be two councilors from each councilor district to serve staggered terms of two years each. All councilors shall have equal voting privileges. A majority of the voting members shall constitute a quorum.

(Note: Italics indicates proposed new copy.)
  - B. Report from Chairman of the Council, John P. Burge, M.D.
10. New Business
  - A. Report from Constitutional Revisions Committee

A. S. Koenig, Jr., M.D., Chairman of the Constitutional Revisions Committee, will present a proposed amendment to the Constitution for the first reading. (See report of committee for wording of the proposed amendment. Report appears on page 442 of this issue.)
  - B. Other Committee Reports
11. Announcements of Vacancies on State Boards (See listing which follows)
12. Selection of Society Nominating Committee for Society Officers (Councilor district meetings are held on the floor of the House for selection of one representative from each of the ten districts for the Nominating Committee.)
13. Adjournment

## AGENDA

### FINAL MEETING, HOUSE OF DELEGATES

10 a.m., Wednesday, April 23

1. Call to Order
2. Report of the Nominating Committee
3. Elections

#### Society Officers:

President-elect  
First Vice President  
Second Vice President  
Third Vice President  
Secretary  
Treasurer  
Speaker of the House of Delegates  
Vice Speaker of the House of Delegates  
Councilors (one from each of the ten councilor districts)



**Councilors whose terms expire are:**

1. Asa A. Crow, M.D., Paragould
2. John E. Bell, M.D., Searcy
3. L. J. P. Bell, M.D., Helena
4. John P. Burge, M.D., Lake Village
5. J. B. Jameson, Jr., M.D., Camden
6. C. Lynn Harris, M.D., Hope
7. Robert F. McCrary, M.D., Hot Springs
8. William N. Jones, M.D., Little Rock
9. Rhys A. Williams, M.D., Harrison
10. Ken Lilly, M.D., Fort Smith

**American Medical Association Delegate and Alternate:**

Delegate to the American Medical Association (term of Joe Verser, M.D., Harrisburg, expires December 31, 1980)

Alternate Delegate to the American Medical Association (term of A. E. Andrews, M.D., Texarkana, expires December 31, 1980)

**Vacancies on State Boards:**

*State Board of Health:*

Term of H. W. Keisker, M.D., Jonesboro, First Congressional District, expires December 31, 1980

Term of Bob G. Banister, M.D., Conway, Fifth Congressional District, expires December 31, 1980

*State Medical Board:*

Term of B. P. Raney, M.D., Jonesboro, expires December 31, 1980.  
Dr. Raney represents the old First Congressional District.

4. Report of Reference Committees:

Committee No. 1: Paul Cornell, M.D., Little Rock

Committee No. 2: Richard O. Martin, M.D., Paragould

Committee No. 3: Annette V. Landrum, M.D., Fort Smith

5. Supplemental Report of the Council: John P. Burge, M.D., Chairman

6. New Business

7. Adjournment

**REFERENCE COMMITTEES**

Reference Committees are appointed by the Speaker of the House of Delegates to consider the various reports and resolutions. Reports published in the March issue of the Journal, as well as any reports and resolutions presented at the first meeting of the House on April 20, will be referred by the Speaker to the reference committees. The committees will hold open hearings at 3:30 p.m. on the various items of business. Following the open hearings, the reference committees will hold executive sessions for the purpose of preparing recommendations and reports for the House of Delegates. Reports of the Reference Committees will be acted upon by the House at the Wednesday session.

**Members of the Reference Committees are:**

**Reference Committee Number 1—**

Paul Cornell, M.D., Little Rock, Chairman

Charles Ledbetter, M.D., Harrison

Lloyd G. Langston, M.D., Pine Bluff

Carl Williams, M.D., Fort Smith  
Donald Duncan, M.D., Texarkana  
Medical Student Observer: Tom Koonce

Reference Committee Number 2—

Richard O. Martin, M.D., Paragould, Chairman  
Gary McGrew, M.D., Gurdon  
James Kolb, Jr., M.D., Russellville  
Kelsy Caplinger, M.D., Little Rock  
L. J. Pat Bell, M.D., Helena  
Medical Student Observer: Laurie Smith

Reference Committee Number 3—

Annette V. Landrum, M.D., Fort Smith, Chairman  
Allan Pirnique, M.D., El Dorado  
William G. Mason, M.D., Little Rock  
Lee Parker, M.D., Fayetteville  
H. W. Thomas, M.D., Dermott  
Medical Student Observer: Lee Archer

### STATE BOARD VACANCIES

#### Arkansas State Board of Health

Vacancies occur in the First and Fifth Congressional Districts on the Arkansas State Board of Health.

Members from the First and Fifth Congressional Districts are urged to meet immediately following adjournment of the House of Delegates on Sunday to vote for nominees. Nominations should be reported to the convention registration desk (three required for each position). Members presently serving and counties in the districts are:

First District:

H. W. Keisker, M.D., Jonesboro, term expires December 31, 1980.  
Counties in District: Clay, Craighead, Crittenden, Cross, Greene, Lee, Mississippi, Phillips, Poinsett and St. Francis.

Fifth District:

Bob G. Banister, M.D., Conway, term expires December 31, 1980.  
Counties in District: Conway, Faulkner, Perry, Pope, Pulaski and Yell.

#### Arkansas State Medical Board

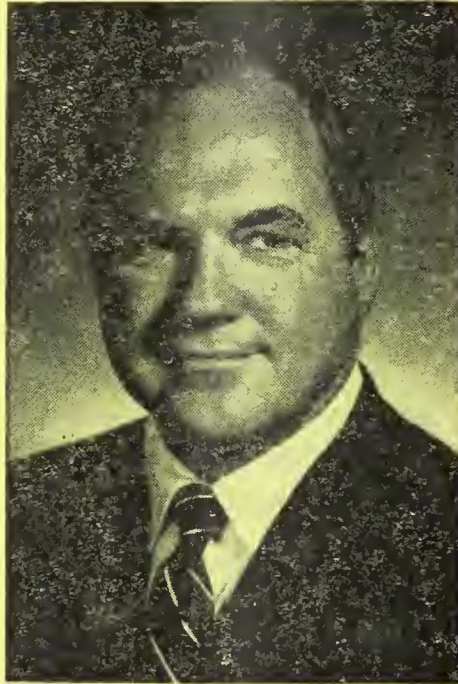
A vacancy occurs in the First Congressional District position on the Arkansas State Medical Board. Members from the counties in the district are urged to meet immediately following adjournment of the House of Delegates meeting on Sunday to vote for nominees. Nominations should be reported to the convention registration desk (only one nomination required). Bascom P. Raney, M.D., Jonesboro, is currently serving a term which expires December 31, 1980. He is eligible for reappointment. Counties in the First Congressional District are: Clay, Craighead, Crittenden, Cross, Greene, Lee, Mississippi, Phillips, Poinsett and St. Francis.

### ARKANSAS FOUNDATION FOR MEDICAL CARE

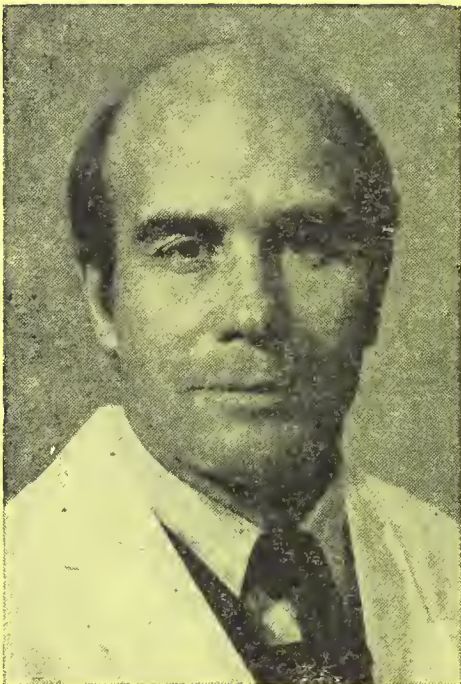
The annual meeting of the Arkansas Foundation for Medical Care will be held at 9:15 a.m. on Wednesday, April 23, in the Arlington Hotel. The meeting is open to all physicians but only members of the Foundation may vote on items of business.



# Distinguished Speakers



ROBERT B. HUNTER, M.D.  
President-elect  
American Medical Association  
Sedro Woolley, Washington



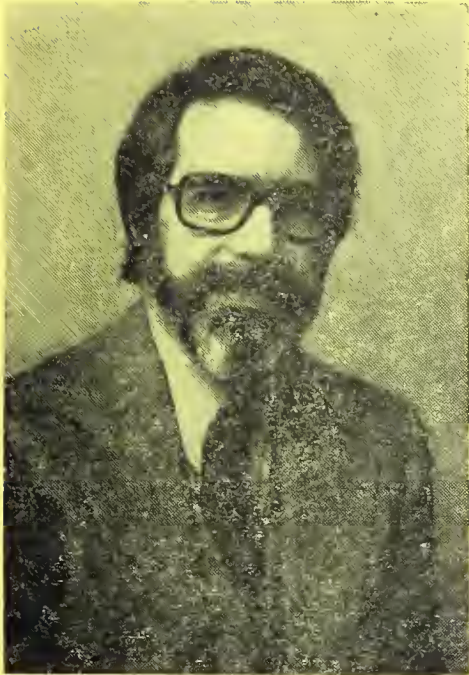
John M. Palmer, M.D.  
Professor and Chairman  
Department of Urology  
University of California School of Medicine  
Davis, California



Sidney Wallace, M.D.  
Professor  
Department of Radiology  
University of Texas Medical School  
Houston, Texas



# Distinguished Speakers



Alexander Green, M.D.  
Director of Solid Tumor Service  
St. Jude Children's Research Hospital  
Memphis, Tennessee

Photograph  
Not Available  
For the Following Speakers:

David Bard, M.D.  
Associate Professor of Obstetrics  
and Gynecology  
University of Arkansas College of Medicine



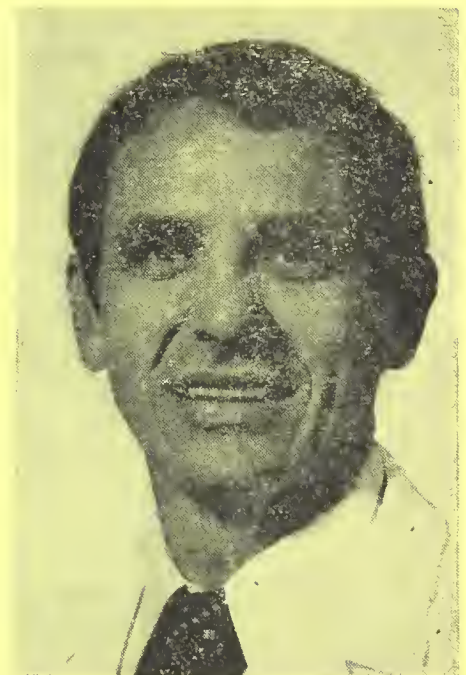
Max Cooper, M.D.  
Professor of Pediatrics and Microbiology  
University of Alabama School of Medicine  
Birmingham, Alabama

William S. Howland, M.D.  
Professor of Anesthesiology  
Cornell University Medical College  
Member, Sloan-Kettering Institute  
New York, New York

Edward Copeland, M.D.  
Professor of Surgery  
University of Texas  
at Houston



Paul Williams, M.D.  
Assistant Professor and  
Director of Ambulatory Clinic  
Department of Family Medicine  
Indiana University School of Medicine  
Indianapolis, Indiana



Bill L. Trantum, M.D.  
Assistant Professor  
Department of Medicine  
University of Arkansas College of Medicine



## *Scientific Program*

### GENERAL SESSION

Program Theme:

*"Recent Advances in Oncology"*

## **Monday Morning, April 21**

Presiding: Paul Cornell, M.D., Little Rock, First Vice President

- 9:00 a.m. "Spectrum of Malignancies of Antibody Producing Cells"  
Max Cooper, M.D., Professor of Pediatrics and Microbiology, University of Alabama School of Medicine, Birmingham, Alabama
- 10:00 a.m. "The Child with Cancer: Assessment of Current Therapy"  
Alexander Green, M.D., Director of Solid Tumor Service, St. Jude Children's Research Hospital, Memphis, Tennessee
- 11:00 a.m. "Interventional Radiology"  
"Percutaneous Biopsies"  
"Transcatheter Infusion and Occlusion Therapy"  
Sidney Wallace, M.D., Professor, Department of Radiology, University of Texas Medical School, Houston, Texas

## **Monday Afternoon, April 21**

Presiding: Richard O. Martin, M.D., Paragould, Second Vice President

- 1:30 p.m. "The Surgical Management of Renal Cell Carcinoma in the Solitary Kidney"  
John Palmer, M.D., Chairman, Division of Urology, University of California School of Medicine, Davis, California
- 2:15 p.m. "Controversial Aspects of Breast Cancer"  
Edward Copeland, M.D., Professor of Surgery, University of Texas at Houston
- 3:30 p.m. "Advances in Gynecologic Oncology"  
David Bard, M.D., Associate Professor of Obstetrics and Gynecology, University of Arkansas College of Medicine, Little Rock

## **Tuesday Morning, April 22**

Presiding: Annette V. Landrum, M.D., Fort Smith, Third Vice President

- 9:00 a.m. "The Effects of Cancer and Chemotherapy in the Perioperative Period"  
William S. Howland, M.D., Professor of Anesthesiology, Cornell University Medical College; Member, Sloan-Kettering Institute, New York City
- 9:45 a.m. "Productive History and Physical Examination in Prevention and Early Detection of Cancer"  
Paul Williams, M.D., Assistant Professor and Director of Ambulatory Clinic, Department of Family Medicine, Indiana University School of Medicine, Indianapolis, Indiana
- 11:00 a.m. "Who Benefits from Chemotherapy"  
Bill L. Trantum, M.D., Assistant Professor, Department of Medicine, University of Arkansas College of Medicine, Little Rock

## *Group and Specialty Meetings*

### **Monday, April 21**

The Arkansas Chapter of the American Academy of Pediatrics will meet at 12:00 noon for a luncheon meeting in the Arlington Hotel on Monday, April 21. Alexander Green, M.D., of St. Jude Children's Research Hospital in Memphis, Tennessee, will be the guest speaker.

The Alan Cazort Allergy Society of Arkansas will meet at Coy's Steak House in Little Rock on Monday, April 21. Cocktails will be served at 6:30 p.m.; dinner at 7:30 p.m. Max Cooper, M.D., Professor of Pediatrics and Microbiology at the University of Alabama School of Medicine, Birmingham, Alabama, will speak on "Immunology."

### **Tuesday, April 22**

The Arkansas Academy of Ophthalmology will meet at 9:00 a.m. on Tuesday, April 22, in the Arlington Hotel for a program, luncheon and business meeting. Dean Burgess, M.D., Assistant Professor of Ophthalmology at Washington University School of Medicine, will speak on "Presumed Ocular Histoplasmosis Syndrome and Senile Macula Choroidal Degeneration."

The Otolaryngology Section, Arkansas Medical Society, has scheduled a meeting for 9:00 a.m. on Tuesday, April 22, in the Arlington Hotel, Hot Springs. A luncheon will be served at 12:00 noon. John Lore, M.D., of Buffalo, New York, will speak on the following subjects:

1. Thyroid disease and thyroid surgery
2. Parathyroid disease and parathyroid surgery
3. Base of tongue reconstruction flaps
4. Carotid body tumors and related vascular surgery

The Arkansas Academy of Family Practice will meet at 12:00 noon in the Arlington Hotel on Tuesday, April 22, for a luncheon meeting. Paul Williams, M.D., will speak on "The Role of Family Practice Gynecological Cancer." Dr. Williams is with the Department of Family Practice at the Indiana University School of Medicine, Indianapolis, Indiana.

The Neurosurgery Section of the Arkansas Medical Society will meet at 12:00 noon on Tuesday, April 22, in the Arlington Hotel. A luncheon and business session are scheduled.

The Arkansas Society of Pathologists will have a business meeting and luncheon at 12:30 p.m. on Tuesday, April 22.

The Arkansas Urological Society will have a meeting at 12:00 noon on Tuesday, April 22, in the Arlington Hotel. John M. Palmer, M.D., Chairman, Division of Urology at the University of California School of Medicine, Davis, California, will speak to the group on "Traumatic Injuries to the Ureter."

The Arkansas Society of Internal Medicine will hold a meeting on Tuesday, April 22, at 12:00 noon in the Arlington Hotel. Jack Blackshear, M.D., Little Rock, secretary of ASIM, will speak on "The Importance of Being an Informed Internist" during the luncheon; a business session will follow.



A scientific program will be presented by representatives of the University of Arkansas College of Medicine following the luncheon and business session:

- 1:00 p.m. "Comparison of Air-Contrast Barium Enema and Colonoscopy in Detection of Colonic Neoplasms"  
Mark H. Bowles, M.D., Gastroenterology Fellow  
Michael D. Hightower, M.D., Gastroenterology Fellow
- 1:20 p.m. "Gastrointestinal Angiodysplasia"  
Mark H. Bowles, M.D., Gastroenterology Fellow  
Dale McGinty, M.D., Gastroenterology Fellow
- 1:40 p.m. "Electrocardiographic Manifestation of Digoxin Intoxication"  
Leon Blue, M.D., Cardiology Fellow
- 2:00 p.m. "Multiple Endocrine Neoplasia Syndromes"  
Larry Stonesifer, M.D., Fellow  
Division of Endocrinology/Metabolism
- 2:20 p.m. "Update on Viral Hepatitis—1980"  
Michael D. Hightower, M.D., Gastroenterology Fellow
- 2:40 p.m. "Tuberculosis Peritonitis in Arkansas 1969-1980"  
Kevin McCusker, M.D., Pulmonary Fellow  
Robert Searcy, Medical Student

The Arkansas Society of Anesthesiologists will meet at 4:30 p.m. on Tuesday, April 22, in the Arlington Hotel. William S. Howland, M.D., Professor of Anesthesiology, Cornell University Medical College, and Member, Sloan-Kettering Institute, New York City, will speak on "Jet Ventilation."

The Arkansas Chapter, American College of Obstetrics and Gynecology will have a luncheon meeting at 12:00 noon on Tuesday, April 22. Speakers and topics for the scientific program will be:

- "Induction of Ovulation" by Dr. Ewa Radwanska, Assistant Professor of Obstetrics and Gynecology; and Associate Director, Gynecologic Endocrinology and Infertility Service, University of Arkansas College of Medicine, Little Rock
- "Modern Concepts of Endometriosis" by Dr. W. Paul Dmowski, Professor of Obstetrics and Gynecology; and Director, Gynecologic Endocrinology and Infertility Service, University of Arkansas College of Medicine, Little Rock
- "Population Dynamics" by Dr. Clay N. Wells, Associate Professor of Obstetrics and Gynecology, University of Arkansas College of Medicine, Little Rock

The Arkansas Chapter, American College of Surgeons will hold a luncheon meeting at 12:00 noon on Tuesday, April 22, in the Arlington Hotel. Charles D. Mabry, University of Arkansas College of Medicine, will speak on "Nutritional Assessment and Technique of Support."

The Arkansas Orthopaedic Society has scheduled a luncheon and business meeting for 12:00 noon on Tuesday, April 22, in the Arlington Hotel.



# *Arkansas Medical Society Auxiliary*

## **Surrounding and Solidly Supporting Medicine and the Doctor**

The 56th Annual Session of the Arkansas Medical Society Auxiliary will be held April 20-22, 1980, in the Arlington Hotel, Hot Springs.

The following is an outline of the tentative convention schedule:

### Registration hours, Mezzanine, Arlington Hotel

Sunday	1:00 p.m. to 4:00 p.m.
Monday	8:00 a.m. to 12:00 noon 2:00 p.m. to 4:00 p.m.
Tuesday	8:00 a.m. to 10:00 a.m.

### **AMA-ERF**

Booth will be open near the registration desk.

### **SUNDAY, APRIL 20**

- 1:00 p.m. Joint Memorial Service with the Arkansas Medical Society
- 2:30 p.m. Pre-Convention State Board Meeting, President's Suite  
Joint meeting with president-elect for state officers, state committee chairmen, county presidents, county presidents-elect, and all NEW State Board members.
- 6:30 p.m. Council reception for all members of the Medical Society and Auxiliary

### **MONDAY, APRIL 21**

- 9:30 a.m. Opening General Session, Arlington Hotel  
Mrs. Frank E. Morgan, President, presiding  
Guest Speaker: Mrs. John F. Vaughan, President-elect, American Medical Association Auxiliary
- 12:30 p.m. Tour, Mid-America Museum (transportation will be available from the Arlington Hotel)
- 6:30 p.m. Cocktail Party hosted by Arkansas Blue Cross-Blue Shield

### **TUESDAY, APRIL 22**

- 7:30 a.m. Prayer Breakfast for members of the Arkansas Medical Society and Auxiliary
  - 8:30 a.m. Past Presidents' Breakfast  
Hostesses: Mrs. Kemal Kutait and Mrs. Carl Wilson, Fort Smith
  - 9:30 a.m. Second General Session  
Mrs. Frank E. Morgan, President, presiding  
Guest Speaker: Mrs. Raymond Yow, President, Southern Medical Association Auxiliary
  - 12:30 p.m. Luncheon, Le Mira Belle French Restaurant (bus transportation will be available from Arlington Hotel)  
Awards: Doctor's Day, AMA-ERF, Membership  
Installation of Officers
  - 6:00 p.m. Cocktail Party, Arlington Hotel
  - 7:00 p.m. Arkansas Medical Society Inaugural Banquet
- Arkansas Medical Society Auxiliary President: Mrs. Frank E. Morgan, Little Rock  
Convention Chairman: Mrs. Deno Pappas, Hot Springs



## *Technical Exhibits*

The business firms who purchase exhibit space at our Annual Session contribute a great deal to the financing as well as to the educational aspects of the meeting. The number of visits to the technical exhibits is the only criterion by which these companies can judge the value they receive from the investment in booth rental, displays and employees' time. You will be rewarded for the time you spend visiting the exhibits. Following are descriptions of displays to be featured.

### ORTHO PHARMACEUTICAL CORPORATION

Ortho Pharmaceutical Corporation is proud to present the most complete line of medically accepted products for the control of conception and the treatment of vaginitis. In addition, Ortho is pleased to present products for the control of diarrhea.

### SMITH KLINE & FRENCH LABORATORIES

Representatives will be on hand to answer your specific questions and provide information on our products and services.

### DODSON INSURANCE GROUP

The Dodson Savings Plan offers physicians a proven way to reduce the cost of their Workers' Compensation premiums when the cost of claims from all participants is kept low through safety. Returns of 37.5% have been paid each of the past two years. Coverage and rates are standard in all respects.

### PROFESSIONAL BIOMEDICAL, INC.

The Professional Biomedical representatives will be displaying a non-invasive, totally automatic, mean arterial blood pressure monitor.

### RATHER, BEYER AND HARPER

Representatives of Rather, Beyer and Harper will have brochures and all information on the Arkansas Medical Society's Group Insurance Plans. The Income Protection Plan, which has been in effect since 1947, is now being issued on a guaranteed renewable basis. Income Protection Benefits are now up to \$2,167 per month. Records will be available so that each physician may review his insurance coverages and what he is eligible to apply for as a member of the Arkansas Medical Society.

### ARKANSAS COMPUTER COMPANY, INC.

Our exhibit will feature Texas Instruments in-house computer systems for medical billing, insurance form preparation and all general accounting applications including general ledger, payroll, accounts payable and inventory control.

### MERCK SHARP & DOHME

Merck Sharp & Dohme cordially invites you to visit our exhibit at Booth #10 featuring several products from our extensive line of pharmaceuticals. Representatives in attendance will be pleased to answer any questions you may have. Inquiries about our professional, informational, and educational services are welcomed.

### NORTHWESTERN NATIONAL LIFE INSURANCE COMPANY

Meyer F. Marks, Inc. is the administrator of the Arkansas

Medical Society Life Insurance Program underwritten by Northwestern National Life Insurance Company. Information will be available on this program which has been in effect for over twenty years. Semi-annual dividends have again been increased. The limit of insurance amount has been increased to \$300,000.

### SAFEGUARD BUSINESS SYSTEMS OF ARKANSAS

Our representatives will be on hand to discuss "One-Write" accounting systems, "Super Bill" and insurance claim forms for medical offices. Office Management Manuals will be available.

### MOUNTAIN VALLEY SPRING COMPANY

You are invited to visit booth #13 which will feature Mountain Valley Spring water.

### AMERICAN PHYSICIANS INSURANCE EXCHANGE

API—Professional liability insurance through the doctor-owned and controlled insurance company.

### PARKE-DAVIS

We invite you to visit the Parke-Davis booth where our sales representatives welcome the opportunity to discuss and assist you regarding Parke-Davis products and products of Warner/Chilcott recently incorporated in the Parke-Davis line.

### LINDE HOMECARE MEDICAL SYSTEMS

We will have a complete line of home care equipment for the patient at home. Come by booth #18 and get full information from our representatives.

### BOOTS PHARMACEUTICALS, INC.

At the 1980 meeting of the Arkansas Medical Society, Boots Pharmaceuticals, Inc., will be featuring Ru-Tuss, Ru-Vert, and Twin-K. Representatives will be on hand to answer questions about these or any other of our ethical pharmaceuticals.

### STUART PHARMACEUTICALS

STUART PHARMACEUTICALS welcomes members and guests to the ARKANSAS MEDICAL SOCIETY. We extend a cordial invitation to visit our exhibit featuring displays and literature for: MYLANTA®/MYLANTA®-II, ALTERNAGEL®, SORBITRATE®, MYLICON®, KASOFT™, DIALOSE® PLUS, and EFFERSYLLIUM®.

Our representatives will be glad to answer any questions on STUART products and accept sample requests.

### A. H. ROBINS COMPANY

You are cordially invited to visit the A. H. Robins exhibit and meet our representatives who will welcome the opportunity to discuss products of interest with you.

### ARKANSAS BLUE CROSS-BLUE SHIELD

Our representatives will have health education material on display at booth #22 during the annual meeting.

### WILLIAM T. STOVER COMPANY, INC.

The latest in medical and surgical supplies will be on display at our booth during the convention. Come and discuss them with our representatives.

### DEAN WITTER REYNOLDS, INC.

Dean Witter Reynolds, a full-service brokerage firm, a

member of the New York Stock Exchange, the American Stock Exchange and other major exchanges, with offices worldwide, will make available information for any type of investment for individuals, corporations or trustees.

#### UNITED STATES AIR FORCE

The Air Force will have personnel and literature available to discuss new trends in Air Force medicine, benefits available and the life style available.

#### NATIONAL MEDICAL RENTALS, INC.

Our representatives will have hospital equipment for the home and respiratory therapy equipment on display.

#### GERBER PRODUCTS COMPANY

Visit the Gerber booth which will feature Gerber Baby Foods, Meat Base Formula, Infant Care Products, Child Safety Devices, Nurser Accessories and Dri-Pride. Ask about our special physician's offer on humidifiers/vaporizers. Also Gerber office and patient service materials. Our medical representatives will be happy to discuss any questions you may have.

#### REED AND CARNRICK PHARMACEUTICALS

Reed & Carnrick, serving the medical profession for over 100 years, produces a line of well-established specialty items which are leaders in the fields of gastroenterology, gynecology, proctology, and dermatology.

#### CUMMINGS X-RAY COMPANY

We will exhibit x-ray control, transformer, tube processor, ECG unit and physiotherapy equipment. Come by booth #32 and discuss these with our representatives.

#### SOLID SOFT CORPORATION

Our exhibit will feature a computerized "patient accounts management system" for health care providers. The system provides account bookkeeping functions, accounts receivable, statement processing, patient recall letters, daily log(s), AGOD accounts balance, and insurance processing and billing. All for an affordable price. Leasing is available.

#### TAB PRODUCTS COMPANY

TAB PRODUCTS is a national company which is the leader in lateral filing systems of all types. We will be highlighting our lateral filing equipment and color coded systems for medical records.

#### CIBA PHARMACEUTICAL COMPANY

CIBA Pharmaceutical Company cordially invites you to visit our exhibit featuring several products from our cardiovascular line. Representatives in attendance will be pleased to answer any questions you may have. Inquiries about any of our professional, informational, and educational services will be welcomed.

#### DOMELABORATORIES

Dome Laboratories is a recognized leader in the field of dermatology and allergy. Dome is now increasing its

product line to enter the fields of chemotherapy, psychiatry, and gynecology.

#### ST. VINCENT INFIRMARY

St. Vincent Infirmary will display 18 diagnostic and therapeutic outpatient services that are planned to be a back-up for a physician's office practice. Physicians living outside Pulaski County may join the SVI Medical Staff as a non-resident member and use our outpatient services.

#### FIRST VARIABLE LIFE/RETIREMENT SYSTEMS CORPORATION

Specialists in the investment, design, and implementation of Pension and Profit Sharing Plans.

The Investment Accounts managed by First Variable continue to provide consistent above-average investment results. Whether you want a guaranteed rate of return, a High Yield Bond Account, or a Common Stock investment, First Variable has the performance record.

Retirement Systems offers complete actuarial and plan administrative services on a fee-only basis.

Come by our booth and see how you can benefit from our experience.

#### DICTAPHONE CORPORATION

Dictaphone Corporation will exhibit its industry leading line of Input Word Processing Systems. Among these are Dictaphone's MASTER MIND AND TIME MASTER Word Management Computers. These systems use the latest micro processor technology available. In addition, Dictaphone will display a complete line of portable units, desktop units, and Central Systems.

#### GENERAL MEDICAL CORPORATION

Our representative will be at booth #5 during the annual meeting of the Arkansas Medical Society. They will be happy to answer any questions you might have about General Medical Corporation.

#### RED APPLE EXECUTIVE CONFERENCE CENTER

Our display will feature color photos of facilities and posters. Will give brochures. Also, will have a drawing for free weekend at the Red Apple Inn.

#### SOUTHWESTERN BELL TELEPHONE COMPANY

Our representatives will have on display voice/data communications. Come by booth #26 to discuss these.

#### BEARDSLEY'S SOUND PRODUCTS DIVISION

We will be exhibiting 3M background music and audio environments and 3M copier.

\* \* \* \*

The Arkansas Medical Society expresses appreciation to the following companies for educational grants:

Bristol Laboratories

Eli Lilly and Company

Mead Johnson Nutritional Division





## *House of Delegates Business Affairs*

Business items printed below are brought to the attention of individual members and the county medical societies. The items reported here represent those received in time for publication in advance of the meeting. All reports and resolutions will be referred to reference committees. Members are urged to attend the open hearings of the reference committees to express their views. Reference committee hearings are scheduled for 3:30 P.M. on Sunday, April 20.

### **OLD BUSINESS**

The following proposed amendment to the Constitution and By-Laws was approved by the House of Delegates during the 1979 meeting. It will be presented to the House of Delegates for final vote at the meeting on Sunday, April 20.

Amend Article VI of the Constitution, Council, Section 2 (Composition of the Council) to read as follows:

"The Council shall consist of the councilors, the president, first vice president, president-elect, secretary, treasurer, and immediate past president. The speaker and vice speaker of the House of Delegates and the past presidents shall be ex-officio without vote; the immediate past president shall have a vote. There shall be two councilors from each councilor district to serve staggered terms of two years each. All councilors shall have equal voting privileges. A majority of the voting members shall constitute a quorum."

### **NEW BUSINESS**

The following resolution is submitted by the Sebastian County Medical Society for consideration by the House.

### **RESOLUTION**

#### **Re: Mid-Winter Meeting**

WHEREAS, the mid-winter meeting of the Arkansas Medical Society has been predominantly utilized for the discussion of legislative matters, and

WHEREAS, legislative matters in the General Assembly at the present time and the regular attendance of a staff member of the Arkansas Medical Society at meetings of the General Assembly no longer necessitate an annual mid-winter meeting, and

WHEREAS the mid-winter meeting in recent years has been poorly attended by the membership and represents an unnecessary financial burden to the Society, and

WHEREAS, attendance at the House of Delegates at the mid-winter meeting has not been representative of the total membership of the Society,

BE IT RESOLVED: (1) the mid-winter meeting immediately be discontinued as a regular function of the Arkansas Medical Society; (2) any future special meetings of the House of Delegates may be called in compliance with the By-Laws of the Society.

### **ANNUAL COMMITTEE REPORTS**

#### **Committee on Cancer Control**

#### **Herbert B. Wren, M.D., Chairman**

The Society's Committee on Cancer Control met Sunday, November 18, 1979, in Little Rock with Dr. David Barclay and Dr. John Broadwater and myself in attendance. The following recommendations are made to the Society:

1. That the Sub-Committee on Cancer Control meet at least two times a year, in the winter meeting and in the spring meeting.

2. That the Committee is in favor of re-instituting the Tumor Registry and improving it. The suggestion is made that funds be sought through Medicare, patient charge, the Cancer Society and private sources. The Committee offers its services as a consultative group to the State Health Department in setting up and maintaining the Tumor Registry.

3. The Committee re-emphasizes the importance of the Pap smear in cancer control. Attention is also called to the increase in carcinoma of the lung, especially among females.

4. The Committee urges all physicians in Arkansas to take note of and try to attend the Arkansas-Oklahoma Cancer Forum. This is a cancer conference put on by the Cancer Societies of both states and has been held in Fort Smith the last three or four years. (The 1980 meeting will be held September 25-26.)

The Committee hopes that these recommendations will be given serious consideration by the Society.

### **Committee on Medical Legislation**

**James R. Weber, M.D., Chairman**

Although this year was considered to be an off year in terms of legislative activities, this committee and other members of the Society have been very much involved with activities pertaining to the special session of the Legislature, the Health Department's application for federal funding to develop an Office of Rural Health, and regulations by the State Board of Nursing pertaining to nurse practitioners.

The Legislative Committee met to review proposed legislation that would allow for the issuing of temporary permits for all those individuals licensed by the State Board of Nursing. The committee recommended changes, and a meeting was held with the sponsors of the legislation which brought about changes prior to the introduction of the bill. Thanks to Senator Morris Henry, an amendment was added to the bill before its passage that would require the State Board of Nursing to closely scrutinize the qualifications of an applicant prior to issuing a temporary permit to a nurse anesthetist.

Activities pertaining to the State Health Department developing clinics in rural areas involved meetings between several physicians and the Governor, as well as debates before each of the Health Systems Agencies pertaining to the advisability of awarding a grant for the program. The primary concerns with this program were not that Arkansas should be concerned with improving the health of its rural citizens, but rather that the plan developed by the Health Department had many deficiencies. Among these were inadequate planning which did not involve consumers or providers of health care, the fact that this plan would allow for the compensation for services in amounts exceeding that now paid to practicing physicians in the State, and questions pertaining to a patient's right to choose the provider of services.

Under the Health Department's plan, those individuals with income slightly above Medicaid eligibility requirements would be eligible for Medicaid only if they enrolled in clinics established with help from the Health Department.

There were questions as to the quality of care that would be provided in those clinics which had no full-time physician.

The Department of Health, Education, and Welfare approved the grant after it was turned

down by the boards of three Health Systems Agencies. One HSA did not review the grant before approval.

The chairman of your committee and Dr. A. E. Andrews met with the State Board of Nursing on two occasions to discuss proposed regulations for nurse practitioners. At our suggestion, changes were made in the regulations to require that nurse practitioners work "under the direction of a physician" and that preceptors of nurse practitioners be more highly qualified.

I would like to express my appreciation to the members of the committee and the many physicians who have been active in voicing their concern about the delivery of medical care. All physicians should develop a good relationship with their elected officials and express their concerns about issues facing medicine.

### **Sub-Committee on National Legislation**

**W. P. Phillips, M.D., Chairman**

The Sub-Committee on National Legislation has concerned itself with ways in which it could keep the membership of the Society aware of contemplated federal legislation. Direct contact with Arkansas' elected representatives was initiated this year when the Council sent a group of Society members to Washington for a conference with our congressional group. The committee suggests that the Council continue to do this on an annual basis and more often if critical medical legislation is pending.

### **Committee on Public Health (Rural Health)**

**Ben N. Saltzman, M.D., Chairman**

The chairman of the Committee on Public Health attended the National Rural Health Conference held in St. Paul, Minnesota, April 18, 19, and 20. The conference, sponsored by the American Medical Association, was innovative in that it included considerable activity related toward continuing education for the practicing physician. A large number of physicians over the country were in attendance. The majority of people, however, were those involved in the development of rural health clinics sponsored and funded by state and federal mechanisms.

In May and early June, planning for the Arkansas Rural Health Conference took place. Involved were the Arkansas Extension Service, the Arkansas Health Department, the Arkansas Farm Bureau, the Arkansas State Dental Association,



the University of Arkansas for Medical Sciences, the Arkansas Blue Cross-Blue Shield, the Arkansas Medical Society and the auxiliaries of these organizations.

On June 25 the chairman spoke to an Alabama Rural Health Conference held at Gulf Shores, Alabama, concerning the Arkansas Rural Medical Development Program.

Dr. Robert Young, Director of the State Health Department, announced the receipt of a federal grant to study and initiate a Rural Health Clinic program for the State of Arkansas. Because the physicians of the State felt that they were left out of the planning it became necessary for the Governor to hold a meeting in the Governor's mansion to air the concerns presented. The chairman had the privilege of attending such a meeting on July 23. Represented were the leaders of most of the health organizations concerned. As a result of the meeting the Governor appointed an advisory committee to consult with the director. The Arkansas Medical Society is well represented on the committee.

On August 14 the chairman presented the annual award to the winner of the 4-H Health competition. This presentation was made at the 4-H O-Rama in Conway, Arkansas.

The State Rural Health Conference took place in the Camelot Inn in Little Rock on August 22. More than 600 community leaders, public health nurses, Extension people and physicians from over the State were in attendance. The program concerned itself with rural health care for an aging population. Arkansas has been selected as the site of the 3rd National Rural Primary Care Association meeting. The chairman serves as a member of the advisory committee for that conference. Planning sessions have been held in Little Rock and in Kansas City, Missouri. The Arkansas Medical Society will act as co-host and the conference will take place March 2 through March 5. The location will be the Camelot Inn and Conference Center.

Because of the involvement of the officers of the Arkansas Medical Society in the rural health activities generated by the Arkansas Department of Health, a committee meeting was not held at the time of the winter meeting of the Society.

The chairman continues to serve as a member of the Board of Health, as Director of Rural

Medical Development Programs, College of Medicine, and as Director of Continuing Education for Family Physicians in the College of Medicine.

Considerable interest has been generated concerning the problems of rural health this past year. Hopefully, some positive results will come out of the study of the various committees assigned this task.

#### **Sub-Committee on Tuberculosis**

**Donald L. Miller, M.D., Chairman**

The Sub-Committee on Tuberculosis met November 18, 1979, during the Arkansas Medical Society Winter Meeting in Little Rock.

Joseph H. Bates, M.D., Chairman, Tuberculosis Advisory Committee, Arkansas State Health Department, and William W. Stead, M.D., Director, Tuberculosis Program, Arkansas State Health Department, were invited to meet with the committee and were present. The purpose of the meeting was to discuss the past and present history of the development and implementation of the Arkansas State Tuberculosis Program.

It was apparent through the discussion that, in recent years, fantastic strides in the management of tuberculosis have been made by this program. The management and treatment of tuberculosis has evolved from a system that incarcerated people in a sanatorium to the present efficient and humane method of management. There is no way to estimate the overall costs, the disruption of lives and families, loss of occupation, etc., that were often perpetrated by the necessary and, at times unnecessary, prolonged sanatorium hospitalizations prior to the development of the present tuberculosis program.

The development of a complete statewide network of chest clinics, in conjunction with regional general hospitals designated by the Health Department for short-term hospitalization of patients, has proved a tremendous success. This program has completely changed the impact of tuberculosis and other chest diseases on the lives of involved patients and their families. It provides for brief periods of hospitalization and outpatient total management, while largely allowing people under treatment to continue or rapidly resume their usual occupation or mode of living. This positive factor has saved the state an unfathomable amount of money by allowing and encouraging patients to remain productive



and tax-paying citizens, rather than becoming dependent on welfare or other agencies.

The program has been quite successful in caring for its patients in a most efficient and effective manner unequalled by any other program in existence. It serves as a most successful model and as an example of a cooperative effort involving private practicing physicians, a public health agency, and a medical school. The program allows extensive monitoring of the progress and status of its patients and affords sophisticated methods for evaluating results of treatment. Its design provides educational benefits to the medical profession, as well as more enlightenment and understanding of tuberculosis by the general public.

General and more specific statistics supporting the successful operation of this program were discussed at length by Drs. Bates, Stead, and the committee. It is felt that all people involved in this program since its inception are to be highly commended and that the program could not have evolved to its present state without the perceptive insight, dedication, and cooperation of many involved people.

Further discussion was held regarding the dilemma facing the TB Program at this time. This involves reduction in funding of the program which will not allow its continued operation at the same level of achievement. It was the feeling of the committee that such a medically effective and cost effective program should, without question, be allowed to continue its full operation in order to avoid detrimental effects on the health and well-being of many people suffering from tuberculosis and other lung diseases in Arkansas. It seemed obvious to those present that insufficient funds could very well lead to decreased participation of people essential to the successful continuation of this program.

The committee feels that every effort should be made to impress upon people in positions of responsibility the necessity for continuing adequate funding for this program.

The committee concluded that it would propose the accompanying resolution which will be presented to the Council of the Arkansas Medical Society and the House of Delegates. We have the expectation that the resolution will ultimately be adopted by the Arkansas Medical Society in its annual meeting in 1980.

## RESOLUTION

### Sub-Committee on Tuberculosis

The Tuberculosis Program of the Arkansas Department of Health has demonstrated highly effective and efficient methods of managing tuberculosis and other lung diseases through its network of chest clinics and regional hospitalization system.

This program has served as a model for other states and remains one of the most outstanding programs in existence.

Its successful operation serves as an outstanding example of cooperative efforts involving private practice physicians, a public health agency, and a medical school.

The benefits from this program are many and varied, and include not only modern, efficient, and humanistic management of people with tuberculosis and other lung diseases, but allows close monitoring with adequate supervision of its patients.

The program has proven to be economically superior to the previous system utilizing sanatoriums, but currently faces a severe crisis due to inadequate funding.

The Sub-Committee on Tuberculosis of the Arkansas Medical Society wishes to commend all persons involved in the development and implementation of the State Tuberculosis Program and recommends that the program be allowed to continue at its present level of operation. We call upon the Governor of the State of Arkansas, the Director of the Arkansas Department of Health, and other persons in responsible positions to use their influence to correct the inequities in funding for this program.

### Immunization Sub-Committee

#### Betty A. Lowe, M.D., Chairman

The Immunization Committee of the Arkansas Medical Society met Sunday, November 18, 1979, at 9:00 a.m. Those attending were Dr. Betty A. Lowe, Chairman, and invited guests — Dr. Tom McChesney, D.V.M., Arkansas State Health Department, and Mr. James Mills with the State Health Immunization Program.

Dr. McChesney discussed the current problem with rabies in Arkansas wildlife. This year, from January 1, 1979 to date, there have been 307 laboratory confirmed cases of animal rabies in Arkansas; 279 of which occurred in skunks.

There has been an increase in the skunk pop-



ulation and the State Health Department is discussing ways to control this problem.

Dr. McChesney stated that each county health unit and each practicing veterinarian in Arkansas maintains a supply of insulated containers to enable physicians and interested parties to ship animal heads to the department for a fluorescent antibody test on suspect heads. Test results can be obtained in a 6-8 hour period usually for better patient management. Human rabies immune globulin and rabies vaccine is also provided for post exposure immunization.

It is important that Arkansas physicians be aware of rabies in our wildlife and continued rabies immunization of dogs and cats should be strongly supported.

Mr. James Mills gave an update on current immunization in Arkansas' children.

Currently, 95% of school age children are adequately immunized against diphtheria, tetanus, polio, measles and rubella. A 1979 survey of two-year-olds revealed that 86% of them were adequately immunized.

The Arkansas Child Immunization has been quite successful and we are now entering a maintenance phase. Awareness of need for immunization tends to decrease and Arkansas physicians need to continually reinforce the need for children to become totally immunized.

In 1978 there were 35 cases of pertussis, 17 cases of measles, 58 cases of rubella, one case of tetanus and 659 cases of mumps reported to the Arkansas State Health Department.

Since a committee quorum was not present, no action or recommendations were made on the above presentation.

#### **Sub-Committee on**

#### **Liaison with Vocational Rehabilitation**

**John P. Wood, M.D., Chairman**

The Sub-Committee on Liaison with Vocational Rehabilitation met with five representatives of the Department of Social Services Rehabilitation Division at the November meeting of the Arkansas Medical Society in Little Rock. All members but one were present.

Updating of the fee schedule was discussed and it was felt that no fee schedule increase could be implemented in the coming year. The members of the Committee present were unanimous in their feeling that the fee schedule at present is equitable and acceptable.

It is reported that some staff reduction in the next year could be anticipated due to a reduction of Social Services funds of \$300,000.

It was revealed that over 5½ million dollars in services were purchased by the Rehabilitation Division from participating members of the Arkansas Medical Society during the past year.

Specific operative cases discussed in detail by members present were open heart surgery, plastic surgery, and procedures for morbid obesity. The number of open heart procedures has somewhat stabilized. It was reported that there had been a substantial increase in the number of cases of procedures for morbid obesity in the past twelve months. The requirements to be met to qualify these individuals for this procedure were discussed in some detail.

It was announced that Mr. Lewis Urton, an invaluable member of the Department of Social Services Rehabilitation Division, was resigning effective January 1st. Mr. Urton's contributions to this program and his assistance to the Subcommittee were invaluable and his loss will be felt greatly.

It must be pointed out that there have been very few complaints from the membership with regards to our relationship with the Department of Social Services Rehabilitation Division during this past year. The Committee feels that our relationship has been mutually profitable and most satisfactory.

#### **Committee on Continuing Medical Education**

**John M. Hestir, M.D., Chairman**

The Committee on Continuing Medical Education met during the year and recommended that there be no implementation at this time of mandatory continuing medical education for membership retention. This recommendation was made to the Council and received its support.

The committee recommends that the Arkansas Medical Society at this time work with both the American Medical Association and the Liaison Committee on Continuing Medical Education for the accreditation of organizations for their educational programs by both of these organizations. At the present time, the requirements for accreditation by both of these national accrediting organizations are almost identical. In the event that the two organizations establish requirements that are significantly dissimilar, this recommendation should be reconsidered.

A survey team composed of members of the Continuing Medical Education Committee re-surveyed St. Joseph's Mercy Medical Center in Hot Springs for the continuation of accreditation of their educational program.

At the present time there are several organizations and institutions which have been surveyed by the Medical Society and have received accreditation. They are: the Arkansas Academy of Ophthalmology; St. Joseph's Mercy Medical Center, Hot Springs; Baptist Medical Center, Little Rock; Memorial Hospital, North Little Rock; St. Vincent Infirmary, Little Rock; Veterans Administration Hospital, Fayetteville; and the Arkansas Medical Society Committee on Scientific Programs. The University of Arkansas College of Medicine is accredited for its continuing medical education programs direct from the national level.

The chairman of your committee and Mr. Ken LaMastus, of the Arkansas Medical Society staff, attended the Seventh Annual Conference on Continuing Medical Education for State Medical Associations and Specialty Societies. Among the items discussed at the meeting were continuing medical education requirements for relicensure and state society membership. It was the consensus of many of those present at the meeting that this was not an advisable route to take and the states that had already done so were having some second thoughts.

#### **Committee on Public Relations**

**W. Ray Jouett, M.D., Chairman**

The Committee on Public Relations has met one time in the past year for the purpose of making some decisions about the implementation of the Burroughs Wellcome Program for spots to be aired concerning medical problems.

A list of topics will be mailed to all physicians and their participation is invited in the topics in which they would like to participate.

This concluded the business before the Committee.

#### **Sub-Committee on Liaison**

**with the Auxiliary**

**Frank E. Morgan, M.D., Chairman**

This committee has had no official meetings during the year. Dr. Boop and I did accompany our wives, the president-elect and president, re-

spectively, to the annual meeting of the American Medical Association Auxiliary in Chicago in July, 1979.

Dr. Chudy and Dr. Harris have attended the Council meetings along with the president of the Auxiliary, Mrs. Morgan.

The committee is quite proud of the work of the Auxiliary and they are to be highly commended for their work.

#### **Committee on Aging**

**Chalmers S. Pool, M.D., Chairman**

The Committee on Aging met on November 18, 1979, at the Camelot Inn in Little Rock. Members present were Dr. Chalmers S. Pool (Chairman), Little Rock; Dr. John Guenther, Mountain Home; Dr. Charles Bailey, Greenwood; Dr. Woodbridge Morris, Little Rock, and Dr. John Baldrige, Jonesboro.

The Committee members agreed that the following resolutions are in order:

1. Rigid rules requiring patients to be seen at frequent intervals in the nursing home, such as those of HEW requiring monthly visits, be changed in favor of the physician in charge to make visits as often as necessary for the welfare of the patient. This is felt to be more cost effective and fair practice of medicine.
2. Physicians should decide on the need for necessary laboratory work rather than follow guidelines established by non-medical groups or by the State Health Department. Again, this is thought to be a more fair and economical move than arbitrary tests, whether routine or specialized.
3. Physicians should be protected from such pressure as now exerted by consumer groups, families of patients, and paramedical personnel who believe diagnostic investigations of many complaints in the elderly patients will be justified.
4. The Committee on Aging wishes to endorse those current practices which endeavor to control communicable diseases among elderly patients (for example; the control of tuberculosis) and hereby recommends more thorough physical examinations on a periodic basis to prevent transmission of communicable disease among elderly, especially when confined in nursing homes or hospitals.



**Report of the  
Constitutional Revision Committee  
A. S. Koenig, Jr., M.D., Chairman**

In compliance with the action of the House of Delegates on November 18, 1979, the following amendment to the Constitution of the Arkansas Medical Society is submitted for consideration at the annual session of the Society. The amendment is submitted without recommendation from the committee.

**ARTICLE VI. Section 2.**

(The amendment to the existing constitution is shown in capital letters. That portion which is being deleted is in italics. The portion underscored is being presented for final consideration at the Sunday meeting of the House of Delegates during the 1980 meeting.)

The Council shall consist of the councilors, the president, first vice president, president-elect, secretary, treasurer, and immediate past president. The speaker and vice speaker of the House of Delegates and the past presidents shall be members ex-officio without vote; the immediate past president shall have a vote. *There shall be two councilors from each council district to serve staggered terms of two years each* WHICH HAS TWO HUNDRED MEMBERS OR LESS. IN DISTRICTS WHERE THERE ARE MORE THAN TWO HUNDRED MEMBERS, THERE SHALL BE AN ADDITIONAL COUNCILOR FOR EACH ADDITIONAL ONE HUNDRED MEMBERS. THE COUNCILORS SHALL SERVE STAGGERED TERMS OF TWO YEARS EACH. All councilors shall have equal voting privileges. A majority of the voting members shall constitute a quorum. (Besides its duties mentioned in the By-Laws, the Council shall constitute the Finance Committee of the House of Delegates.)

**Ad Hoc Committee on Liaison  
with Health Systems Agencies  
Kemal Kutait, M.D., Chairman**

The committee is continuing to meet at least annually to discuss events occurring in each of the Health Systems Agencies and the State Health Coordinating Council. This year's amendments to the Health Planning Law in some cases placed more responsibility for health planning on the Health Systems Agencies.

The use of federal funds will receive closer review by HSA boards. However, all state governors are given the responsibility of approval of state health plans.

The new federal law extends the Certificate of Need (CON) requirements to cover all diagnostic and therapeutic equipment costing \$150,000 or more, regardless of location, if the equipment is to be used for hospital in-patients. In effect, this new provision extends the Certificate of Need to include physicians' offices for the rental, purchase, or lease of covered equipment. In addition, the State Health Planning and Development Agency (SHPDA) must be notified in advance of the rental, lease, or purchase of equipment meeting the \$150,000 threshold even if the equipment would not be used for hospital in-patients. The responsibility of determining if a Certificate of Need will be required rests with the state agency.

It should be mentioned that, in some cases, health planning groups are considering requiring a Certificate of Need prior to a physician's establishing his practice.

Because of the continuing changes and possible encroachment on the practice of medicine by health planning groups, it is extremely important that physicians maintain an active role in the health planning process in the State. Those physicians serving on health planning boards and committees are to be commended for their service and encouraged to continue their involvement in the process. Those physicians not serving in any official capacity in health planning are encouraged to avail themselves to serve in such capacity, and all physicians should keep abreast of health planning activities.

**Third Councilor District  
Professional Relations Committee  
John M. Hestir, M.D., Chairman**

The Third Councilor District Professional Relations Committee had a good year. We had only one case that was of any particular importance concerning a patient who was in the hospital. A urologist who had just moved into the area was asked for consultation by the man's personal physician. The urologist stuck his head in the door and said that his x-rays were fine. It turned out that the x-rays had already been read by a previous radiologist. The people did

not get the doctor's name and did not know that they were being referred for consultation and were billed \$50.00 not covered by Medicare. They complained to the Professional Relations Committee for the area. It is fairly obvious that the local M.D.'s were trying to help the man eat. The charges against the person were dropped, and the people thanked the committee for the excellent job that they did. Other than that one incident, the committee has had an excellent year. There were minimal complaints and all have been settled quite satisfactorily.

**Seventh Councilor District**  
**Professional Relations Committee**  
**C. F. Peters, M.D., Chairman**

In the year of 1979, the Seventh Councilor District Professional Relations Committee had two cases brought before it.

These cases were gone into thoroughly and, to the best of my knowledge, were settled satisfactorily to all parties concerned.

**Ninth Councilor District**  
**Professional Relations Committee**  
**Charles A. Ledbetter, M.D., Chairman**

The Ninth Councilor District Professional Relations Committee considered and responded to two grievances in the period from April 1979.

One complaint was on charges of a regional medical center. The Committee responded by a survey of Ninth Councilor District hospital charges and these findings were supplied to the complainant. The case was also referred to the Arkansas Hospital Association.

The last complaint was of patient care. This was evaluated by the Committee members and various specialists caring for the patient. The patient's family retracted their complaint after a thorough investigation.

**Tenth Councilor District**  
**Professional Relations Committee**  
**Samuel E. Landrum, M.D., Chairman**

The Tenth Councilor District Professional Relations Committee reviewed the complaint between a patient's husband and his deceased wife's physician. Intensive evaluation of this problem was conducted, and the gentleman's complaints were satisfactorily met to some extent. No cause for action against the physician was found.

**Eighth Councilor District**  
**W. Ray Jouett, M.D., Councilor**  
**William N. Jones, M.D., Councilor**

The major activities of the Eighth Councilor District during the past year are listed as follows:

1. Encouraged physician interest and membership enrollment in the Central Arkansas Health Systems Agency.
2. Approved participation of physician members in a proposed county-wide hospital disaster drill.
3. Sponsored a meeting of all members to hear a presentation by the Medical Staff of Arkansas Children's Hospital on its expansion plans.
4. Sponsored for new physicians a dinner meeting program on office practice management.
5. Adopted a resolution to the Arkansas General Assembly opposing legislation permitting optometrists to use diagnostic drugs.
6. Heard a report on new laws pertaining to commitment of patients to the State Hospital.
7. Endorsed a fund raising project to rebuild the health facility at College Station which was destroyed by fire.
8. Contributed \$500 to the Aldersgate Medical Camp for children.
9. Declined to participate in a pilot program by Metropolitan Life Insurance Company on second surgical opinions.
10. Received and discussed reports on proposed rural health clinics by the Arkansas State Health Department.
11. Sponsored a meeting of members and wives to hear an address by Congressman Ed Bethune.
12. Surveyed membership on the advisability of sponsoring an AMA negotiations training program.
13. Held a special meeting of Eighth District Delegates and Alternate Delegates to the Arkansas Medical Society.
14. Sponsored a meeting for members to hear a presentation by American Physicians Insurance Exchange on a new malpractice program.
15. Worked closely with the Pulaski County Medical Assistants Society and other paramedical organizations.
16. Accepted fifty-six new active members and thirty-one new courtesy members during the year.



**Ninth Councilor District**

**Morriss M. Henry, M.D., Councilor**

**Rhys A. Williams, M.D., Councilor**

A meeting of the Ninth Councilor District was held December 10, 1979, at the Springdale Country Club, Springdale, Arkansas.

The educational portion of the program was presented by Dr. David Crittenden, a Fayetteville nephrologist, who discussed end stage renal disease, renal transplants, and the need for kidneys for transplants. Dr. Crittenden encouraged physicians who have terminal patients who might be candidates for kidney donation to make proper contacts with those physicians and organizations knowledgeable concerning the harvesting of kidneys.

Dr. Robert Young, Director of the State Health Department, discussed activities at the Health Department, including their shortage of funds and the fact that a request would be made at the special session of the Legislature in January for additional funding for the Health Department.

Dr. Young pointed out the problems of medical care in rural areas and the fact that thirty-eight counties in Arkansas were classified as being short of physicians. The Health Department's plan for alleviating these problems consists of the staff at the Health Department who will provide expertise in such areas as management, grant application, and the recruiting of professionals.

Dr. Morriss Henry and Dr. Rhys Williams, Councilors for the Ninth District, informed those present of the issue that will be coming before the House of Delegates at the Annual Session pertaining to changes in the make-up of the Council, based on the number of physicians in each councilor district. The number of councilors under this proposal would be based on two councilors for each of the present ten districts with 200 or less members. For each additional 100 members, the district would be entitled to one additional councilor.

**Report of the Council**

**John P. Burge, M.D., Chairman**

The Council of the Arkansas Medical Society met on Sunday, June 10, 1979, at the Hilton Inn in Little Rock and transacted the following business:

1. Selected David Bachman of Russellville for

appointment to the tenth councilor district position on the Arkansas State Arbitration Commission.

2. Heard a discussion by J. Royston Brown and Mr. Dick Clark regarding American Physicians Insurance. The Council voted to give wholehearted approval to the entry of API into Arkansas.
3. Heard a discussion of the Arkansas Medical Society Employee Pension Plan by Mr. Glen Owens of Owens and Associates and Mr. Leland Schmitt of National Investors Life Insurance Company. The Council voted to direct that the Budget Committee of the Society consider changing the direction of the retirement plan and report back to the Council in sixty days. National Investors was asked to provide the Society office with a summary of the plan for distribution to members of the Council.
4. Approved actions of the Executive Committee at a meeting on May 2, 1979:
  1. Discussed appointing a qualified physician to sit on the Nuclear Generator Advisory Committee appointed by the Governor to evaluate potential risks and actions that should be taken to counter these risks.
  2. Discussed establishing a committee of the Arkansas Medical Society to meet with the Director of the State Health Department and the Governor's health aides on a regular basis.
5. Voted to request an opinion from legal counsel on a component society compliance with membership provisions of the State Society Constitution.
6. Directed that the Executive Committee study the possibility of obtaining statistical data from the Arkansas Foundation for Medical Care to enable the Private Insurance Review Committee to expand the scope of its peer review activity to include quality of care, appropriateness of treatment and/or hospitalization, etc.

The Council met on Sunday, August 5, 1979, at the Camelot Inn in Little Rock and transacted the following business:

1. Mr. Fred Bean of Blue Cross-Blue Shield discussed the experience rating report for the Society's group plan, and suggested that the Council consider modifying the plan to (1)

change the deductible from \$100 to \$500 and (2) offer a reduced premium to physicians under thirty-five years of age. The Council voted to make no changes in the plan until the present participants could be polled regarding the proposed changes.

2. Chairman Burge requested a report from the Budget Committee on its study of the Pension Plan for Society employees. At the request of Secretary Shuffield, individuals affected by the plan left the room.

(A) Ken Lilly, chairman of the Budget Committee, reported for his committee. The Council voted to make immediate payment to National Investors Life Insurance Company the \$19,000 still outstanding on the initial liability for funding of Mr. Schaefer's retirement.

(B) Ben Saltzman reported for the Board of Trustees of the Pension Plan, presenting a recommendation that the Council consider modifying the pension plan to provide for offsetting the increase in the Society's obligation for the Consumer Price Index adjustment by applying a 66% offset of the amount of increase in social security. The Council delayed action on the recommendation from the Trustees until the complete report had been heard.

(C) Shuffield moved, with second by Williams, that the Council dismiss the Board of Trustees and appoint the Budget Committee as the trustees for the Pension Plan. A substitute motion was presented by Wilkins, with second by Lilly, that the trustees of the Pension Plan be instructed to meet at least annually and report back to the Council as the responsible fiduciary body of the Arkansas Medical Society, and that the present Board of Trustees be directed to draw straws for terms on the board of five-year increments so that one trustee will be placed on every five years. An amendment was proposed by Kolb to provide that a trustee would not be eligible for re-election until being off the board for one year. That amendment was accepted by Wilkins and Lilly and the Council voted on the substitute motion as amended. Vote was by a show of hands,

with 12 voting for the motion, two voting against and four abstaining.

(D) The Council then voted to accept an amendment to the Pension Plan proposed by the plan consultant and recommended by the plan Board of Trustees as stated in 2(B) above.

(E) The Board of Trustees was instructed to go over the Pension Plan of the Arkansas Medical Society paragraph by paragraph and report back to the Council within six months.

3. Voted to sponsor Mr. Warren and Mr. Mitchell in the organization of state medical society attorneys.

4. Voted to send representatives of the Society to Washington to visit with members of Arkansas' congressional delegation.

5. Voted to write the Governor requesting that he establish a committee consisting of the Director of the Health Department and representatives of the Medical School, Academy of Family Physicians, the Medical Society, and the Hospital Association to work together on health planning for Arkansas.

The Council met on Sunday, October 7, 1979, at the Camelot Inn in Little Rock and transacted the following business:

1. George Mitchell reported on the results of the survey made by Blue Cross-Blue Shield pertaining to proposed changes in the group plan for Society members. The Council took no action to change the plan but requested information from Blue Cross-Blue Shield on the feasibility of offering a group plan for physicians' employees, and their families.

2. Austin Grimes reported to the Council on problems encountered in fulfilling the charge to the Private Insurance Committee which he chairs. The Council voted to abolish the Private Insurance Review Committee.

3. President Andrews reported on the trip by Society representatives to Washington to visit with members of Congress from Arkansas. It was the consensus of those making the trip that it had been worthwhile and that the Society should give consideration to making such a visitation on an annual basis.

4. Purcell Smith reported on an invitation from the Southeastern states to join their caucus group at AMA conventions. The Council



voted to continue the present arrangements of meeting with the Mid-America group.

5. Chairman Burge presented a proposal from the Reorganizational Study Committee as follows:

"The number of councilors be based on two councilors for each of the present ten districts with 200 or less members. For each additional 100 members, the district will be entitled to one additional councilor."

The Council voted to accept without recommendation the proposal from the committee and to refer it to the House of Delegates.

6. Chairman Burge recognized Dr. Robert Young, Director of the State Health Department. Dr. Young advised the Council that the Department had discontinued the Cancer Registry and that the Department would host a national conference on rural primary care in March 1980. He also discussed the Department's application for a Rural Health Development grant.

The Council met in executive session to consider the following items of business:

1. Approved the Executive Committee's actions on August 9, 1979, at which time the Executive Committee selected members to represent the Society to meet with the Arkansas Congressional delegation in Washington, D.C., in September 1979.
2. Members of the Executive Committee discussed further the Health Department's application for the Rural Health Development grant. The Council voted to send a letter to Dr. Young over the signature of the Chairman and furnish a copy to Governor Clinton. The letter is to acknowledge remarks made by Dr. Young to the Council, reiterate the Society's interest in improving health care for the people in rural areas of the State, and to express opposition to the proposed rural health development program and the position of the Health Department toward implementation of the program.

The Council met on Sunday, November 18, 1979, at the Camelot Inn in Little Rock and transacted the following business:

1. Chairman Burge presented the Arkansas Medical Society Restated Pension Trust Plan for approval of the Council. He advised the Council that the plan had been

reworded to comply with some provisions of the Federal Government regulations and the following changes had been made in the provisions of the plan effective October 1, 1978:

- A. The provision that an employee may retire after 35 years of service has been eliminated for employees hired after October 1, 1978;
- B. There has been included a provision that annual adjustment for the cost of living be integrated with increases in Social Security benefits;
- C. The plan has been modified to provide that the annual cost of living adjustment shall be limited to an increase of ten percent over the previous year's benefit.

The Council voted to approve the restated plan as presented.

Chairman Burge then presented recommendations from the Board of Trustees which were not part of the actual plan:

- A. That the Society treasurer automatically be a voting trustee of the pension plan for the term of his office and there be four other voting trustees with staggered terms. Normal terms would be four years.
- B. That a trustee must be off the board for one year before being eligible for reappointment.
- C. That the Executive Vice President of the Society be an ex-officio member of the board of trustees without vote.

The Council voted to approve those recommendations.

2. Pat Phillips, Chairman of the Committee on National Legislation, presented a recommendation from his committee that the Council authorize an annual Congressional visitation by representatives of the Society. The Council voted approval for an annual Congressional visitation by a group of Society representatives selected by the Committee on National Legislation, with the group acting as an ad hoc committee for an additional visitation if indicated by developments.
3. Approved Executive Committee action in accepting an invitation from the Health Department to co-host the National Rural Pri-

mary Care Conference to be held in Little Rock in March 1980. Co-hosting had been recommended by the Chairman of the Committee on Rural Health.

4. Approved Chairman Burge's reappointment of Asa Crow to a four-year term on the Budget Committee. The Council voted to require a one-year interval before reappointment to the Budget Committee in the future.
5. Accepted the report of the Ad Hoc Committee on Study of the Principles of Medical Ethics for referral to the American Medical Association.
6. Voted to support the recommendation of the Committee on Continuing Medical Education that there be no implementation at this time of mandatory continuing medical education for membership retention.
7. Authorized attendance of five officers at the National Leadership Conference of the American Medical Association.
8. Voted to oppose changes proposed by the Department of Health, Education and Welfare and the Center for Disease Control regarding personnel standards for clinical laboratories and to advise our Congressional delegation of such opposition.
9. Voted to reconsider the approval of the Pension Plan for Society employees. A standing vote was then taken on the original motion for approval of the restated plan as presented. With fourteen members voting for approval, the restated plan was approved by the Council.
10. Amail Chudy presented a request from the Med-Dames for financial support of a presentation at the Medical Center by Gordon Decker. The Council voted to contribute \$250.
11. Executive Vice President C. C. Long proposed that the title for Ken LaMastus be changed to Assistant Executive Vice President. The Council so voted.

The Council met on Sunday, January 27, 1980, at the Camelot Inn, Little Rock, and transacted the following business:

1. Voted to go on record as being dissatisfied with the Pension Trust and decided that an ad hoc committee be appointed to make recommendations to be presented to the Council

for its modification. It was agreed that the committee would be appointed by the chairman and that the chairman's proposed appointments would be approved by the Council at its next meeting. The Council chairman was requested to set a time of approximately six months for the ad hoc committee to complete its work.

2. Voted to remove Mr. Paul Schaefer from the Board of Trustees of the Arkansas Medical Society Pension Plan.
3. Chairman of the Budget Committee, Ken Lilly, reported on actions of his committee. He advised the Council that a certified public accountant had reviewed the proposed budget for 1980 and that there would be a cost of \$300-\$500 for his services. The Council voted authorization of payment of the fee. Dr. Lilly then presented the proposed budget as approved by the Budget Committee, calling attention to the fact that the committee had recommended that salaries for the three executive employees be set on a calendar-year basis and that the salaries for the three executives be frozen at the present level until January 1981. The Council voted to adopt the budget as presented by the Budget Committee. Dr. Jones voted "no" on the motion.
4. Upon motion of Jones and Jouett, the Council directed that the headquarters staff contact Owens and Associates to obtain information to assist in a determination of what method of compensation for the firm's services would be in the best interest of the Society and the consultant. The motion also directed that the ad hoc committee to be appointed in accordance with Item 1 study this matter. The motion was approved with one "no" vote.
5. Approved actions of the Executive Committee in meeting held November 28, 1979:
  1. Requested that a copy of the survey form of the Arkansas Statewide Health Coordinating Council entitled "Survey of Statewide Needs and Priorities 1979-1980 Arkansas State Health Plan" be sent to each of the Councilors to be returned to the Arkansas Medical Society and compiled and sent to the SHCC as the Medical Society's reply.
  2. Decided not to make any contribution to



the Governor's Conference on Families as requested by a letter from Ruth Bell, Chairperson, Budget and Fund Raising, Governor's Conference on Families. The Executive Committee requested that Ms. Bell be so notified.

3. Voted to pay the expenses of Dr. James Weber, Chairman of the Committee on Medical Legislation, to attend the State Health Legislation meeting sponsored by the American Medical Association to be held January 3-5, 1980, in Phoenix, Arizona.
6. Approved actions of the Executive Committee in a meeting held January 23, 1980:
  1. Heard Social Services Commissioner Barrett Toan and Medical Services Director Sharon Marcum discuss a proposed study of the Arkansas Medicaid Program by an outside consultant. The study would review procedures as well as problems reported by providers and make recommendation for improvement. The Executive Committee gave its approval to the proposed study.
  2. Considered the possible conflict of the Council meeting on Monday morning of the Annual Session and a Prayer Breakfast planned by the Committee on Medicine and Religion. The Executive Committee felt that a decision on rescheduling of the Monday Council meeting should not be made until the meeting of the group on Sunday of the convention.
  3. Reviewed the proposed by-laws for the Arkansas State Board of Health and approved the by-laws as drafted. The Executive Committee recommended that as soon as legally possible the by-laws of the Board provide that the director of the Health Department be under the direction of the State Board of Health. It was further recommended that Society legal counsel be requested to draft legislation to accomplish this aim.
  4. Directed that an invitation be extended to Robert Hunter, president-elect of the American Medical Association, to attend the Annual Session as the AMA representative.
7. Directed that a resolution received from the

Sub-Committee on Tuberculosis be referred to a reference committee of the House of Delegates as a part of the committee report.

8. Legislative Committee Chairman James Weber reported that the State Legislature voted during its 1980 extended session to designate the Senate and House Infirmary as the H. Elvin Shuffield Infirmary. Dr. Weber reported to the Council on an AMA-sponsored meeting on state health legislation which he had attended and on activities of his committee.

### **Report of the Executive Vice President**

**C. C. Long, M.D.**

The State Legislature met the early part of 1979 and a large part of the staff's time and effort was devoted to observing and reporting to the membership matters that the Legislature was discussing during the first three months of 1979. During this time, the amendment pertaining to malpractice was an issue of prime importance. The staff worked to acquaint the members and the public with the amendment so they could discuss this in as many ways as possible. With the time and effort of the Legislative Committee, our officers and members, we were able to get this amendment passed and it was felt that this would be a definite contribution to the medical malpractice problem in the State for years to come.

On the national legislative scene, two staff members accompanied a delegation of members to Washington to meet with Federal legislators. Issues pertaining to cost containment, Federal Health, Education and Welfare grants in regard to the rural health clinics, and other programs were discussed with these legislators.

Following this meeting, extensive efforts by the staff and the Society members were instrumental in informing our Congressmen so that all four of Arkansas representatives voted to defeat the Administration's Hospital Cost Containment legislation.

The staff worked the last several months of 1979 to acquaint the Society members, the Health Systems Agency Boards and the public-at-large as to some aspects of the programs being proposed by the State Health Department. Primarily, these programs were the rural health clinic program and the proposed data consortium which would have involved discharge abstracts on all patients, federal and private, in the State of Arkansas to

be forwarded through the State Health Department for a data base. Considerable support for the Society's position on these two issues was obtained and some modification in the rural health clinic program was brought about so it was felt that the present program will be of more benefit to the patient population in the State of Arkansas than the initial proposal. After several meetings with the advisory committee of the State Health Department, the grant request to the Department of Health, Education and Welfare for the funding of the data consortium was withdrawn by the State Health Department. We felt that this step was indicated, at this point in time, and that more study and definition should be determined before any consideration of any type of statewide data bank should be approved.

#### Budget Committee

**Ken Lilly, M.D., Chairman**

The Budget Committee submitted the following budget for 1980. The complete budget, as presented to the Council, is available to members upon request.

#### INCOME

<i>Budget Item</i>	<i>1980 Budget</i>
Membership Dues	\$380,000.00
Journal Advertising	26,000.00
Booth Income	10,000.00
Annual Session	3,500.00
AMA Reimbursement	3,000.00
Miscellaneous and Rosters	2,000.00
Interest	25,000.00
Specialty Desk	600.00
Intrav Reimbursement	1,500.00
Ark. Foundation for Medical Care	20,500.00
Continuing Medical Education	500.00
	<hr/>
	\$472,600.00

#### EXPENSES

Salaries	\$168,960.00
Travel and Convention	35,000.00
President's Travel	1,500.00
Taxes	10,000.00
Retirement	35,000.00
Stationery and Printing	5,000.00
Office Supplies and Expense	12,500.00
Telephone and Telegraph	12,000.00
Rent	24,000.00
Postage	16,000.00
Insurance and Bonds	9,500.00
Auditing	2,500.00
Council Expense	6,000.00

Journal Printing	42,500.00
Annual Session	18,500.00
Winter Meeting	2,000.00
Dues and Subscriptions	4,500.00
Gifts and Contributions	1,050.00
Woman's Auxiliary	1,200.00
Legal Services	10,750.00
Special Committee	1,000.00
Rural Health	550.00
Miscellaneous	50.00
Freight and Express	25.00
Office Equipment	1,500.00
Continuing Medical Education	1,000.00
	<hr/>
	\$422,585.00

#### REPORT OF THE ARKANSAS STATE MEDICAL BOARD

**January 1, 1979 - January 1, 1980**

The officers and members of the State Medical Board are as follows:

Ross Fowler, M.D., President  
H. Elvin Shuffield, M.D., Vice-President  
Hugh R. Edwards, M.D.  
Frank M. Burton, M.D.  
John F. Guenthner, M.D.  
George F. Wynne, M.D.  
C. Stanley Applegate, Jr., M.D.  
Bascom P. Raney, M.D.  
Joe Verser, M.D., Secretary-Treasurer  
John B. Currie, Sr.  
Eugene R. Warren, Attorney

The State Medical Board adopted a regulation governing the prescribing of amphetamine and amphetamine type drugs. This regulation has been published in the Journal of the Arkansas Medical Society, and each physician licensed by this Board has been furnished a copy of the regulation. This regulation does not restrict the prescribing of Ritalin. Under the regulation amphetamines and amphetamine type drugs (Preludin) can only be prescribed for narcolepsy or hyperkinesis. The continued prescribing of amphetamines for narcolepsy would require that the physician obtain a second opinion confirming (1) the diagnosis of narcolepsy and (2) that amphetamine is the drug of choice.

The State Medical Board published a 1979 annual directory and the 1980 directory is now being printed.

A yearly financial report of the Board's activities, prepared by Johnston, Freeman & Company, has been sent to the office of the Arkansas Medical



Society, a summary of which is included in this report.

The Board investigated every case of violation of the Medical Practices Act and every complaint filed against physicians reported to the secretary during the year.

The State Medical Board licensed 128 physicians by examination and 251 physicians by reciprocity during the year 1979.

Following is a summary of the Board's proceedings:

Physicians registered for 1979:	
Resident	2,821
Non-Resident	1,911
Physicians licensed by examination	128
Physicians licensed by reciprocity	251
Physicians certified to other states	150
Licenses revoked for	
non-payment of annual registration fee	48
Licenses suspended for	
non-payment of annual registration fee	60
Licenses suspended for	
violation of Medical Practices Act	1
Cases pending for	
violation of Medical Practices Act	13

### ARKANSAS STATE MEDICAL BOARD BALANCE SHEET

June 30, 1979 and 1978

#### ASSETS

Cash in banks—	June 30, 1979	June 30, 1978
Bank of Harrisburg, Arkansas		
Checking account	\$ 48,174.70	\$ 29,235.15
Certificates of deposit:		
Certificate of deposit #4368	13,779.68	13,779.68
Certificate of deposit #2424	7,000.00	7,000.00
Certificate of deposit #3170	8,553.71	8,553.71
Bank of Weiner, Arkansas		
Certificate of deposit #2290	2,746.35	2,746.35
Bank of Delight, Arkansas		
Certificate of deposit #1249	30,000.30	30,000.30
Security Savings and Loan, Camden, Arkansas		
Certificate of deposit #C8200	19,455.28	18,062.06
Certificate of deposit #C8309	12,150.25	11,280.15
Accrued interest receivable	227.51	—0—
Office equipment	4,909.62	4,909.62
Less: Accumulated depreciation	(1,372.57)	(881.61)
<b>TOTAL ASSETS</b>	<b>\$145,624.83</b>	<b>\$124,685.41</b>

#### LIABILITIES AND FUND BALANCE

Accounts payable	3,808.62	—0—
Payroll taxes withheld	523.67	—0—
<b>TOTAL LIABILITIES</b>	<b>\$ 4,332.29</b>	<b>—0—</b>
<b>Fund Balance</b>	<b>141,292.54</b>	<b>124,685.41</b>
<b>TOTAL LIABILITIES AND FUND BALANCE</b>	<b>\$145,624.83</b>	<b>\$124,685.41</b>

### Report from the Arkansas Medical Political Action Committee W. P. Phillips, M.D., Chairman

Although 1979 was an "off-year" for elections, the Political Action Committee remained active, continuing to interview prospective candidates for the upcoming elections.

As a follow-up to our success in the 1978 elections, the board sent the chairman and the treasurer to Washington for conferences with the Arkansas Congressional Delegation. This proved to be a valuable contact with our elected representatives. Our warm reception demonstrated to us the results of our efforts at recognition of the PAC as a viable political tool.

We continued to be in close contact with the national PAC organization. This cooperation will be ever more vital in the future due to certain moves by the Federal Election Commission regarding all political action committees.

The major problem facing us now is continued apathy of the majority of members of the Medical Society regarding PAC support and membership. The board wishes to emphasize that we can be effective in helping control government encroachment only with the financial backing of Society members.

### Medical Education Foundation for Arkansas Robert Watson, M.D., President

The Medical Education Foundation for Arkansas was founded in 1962 by the Arkansas State Medical Society. Its purpose as stated at its onset is to support any worthy means of bettering medical education in this State. It continues to receive financial support from the Arkansas Medical Society, from memorial contributions, and from interest income from Foundation fund investments.

In fulfilling the responsibilities of conscientious stewardship, support has been provided to the University of Arkansas College of Medicine that during the past year brought to the students and faculty a series of eight professional educators selected from among our country's leading medical centers. These speakers have been able to provide supplemental education not heretofore available. The quality and the acceptance of these presentations has, on occasion, reached the point of a near "standing room only" response. These educational activities have benefited many people in many ways.

The financial source of these presentations is recognized as coming from the State Medical Society, and the recognition is developing that the students, the faculty, and the State Medical Society are now all a part of the overall "medical establishment."

During the past fiscal year, investment income has been such that the Foundation has been able to maintain a well-scheduled and well-financed Supplemental Education Program.

The Medical Education Foundation for Arkansas is committed to spend its funds in a manner that will productively promote medical education in Arkansas. This Board asks for and will appreciate suggestions directed toward a fulfillment of this Committee.

### **Report of the Arkansas Foundation For Medical Care**

**Paul C. Schaefer, Executive Director**

The Health Standards and Quality Bureau has continued to put pressures on all PSRO's to reduce review costs. The PSRO's were expected to achieve a review cost not to exceed \$8.70 per admission. Through major efforts on the part of delegated hospitals in Arkansas, the Foundation has been able to meet this goal. It is anticipated that PSRO's will continually be expected to do more with less dollars and, because of this, the Foundation continues to evaluate and modify its review programs.

The Professional Review Committee under the chairmanship of Milton Deneke, M.D., has continued to implement its focusing-out program initiated last year. This program reduces or eliminates concurrent review in those hospitals, and for those diagnoses, and for those physicians where data has indicated that concurrent review does not need to be performed. This focusing program does not eliminate review, it simply changes the methodology. Instead of being 100% concurrent review, a hospital or a physician will be monitored through data analysis. Currently, through the focusing program, about 36% of all federally-funded patients do not undergo concurrent review.

The Medical Care Evaluation Committee under the chairmanship of H. Blake Crow, M.D., has made some major changes in the quality assurance activities of the Foundation during this past year. The first changes occurred when the Foundation requested and received a waiver in

regard to the numerical requirements for MCE studies from the Health Standards and Quality Bureau. This was necessary because it was apparent that hospitals had to be more concerned about the quantity of MCE's performed instead of the quality of the studies. Now hospitals only have to do four or six MCE studies a year depending on their number of admissions and, thus, can devote more time to an effective study.

At the same time, the MCE Committee modified its MCE Guidelines so that more emphasis was placed on studies resulting from identified problem areas. When specific problems were identified either by the PSRO or the hospital, limited criteria can be developed to address that problem with the final result being a simpler study that can have more impact on the quality of care.

Funded as a special initiative in 1978, ancillary service review has now become a full time review component of the AFMC. A six physician Ancillary Services Review Committee chaired by A. Samuel Koenig, III, M.D., has been developing an approach to ancillary services review. A number of studies have been accomplished, including routine admission orders for all patients admitted to Arkansas hospitals, routine orders for patients admitted to intensive care units, a study of utilization of EKG's, and currently is developing a study for an audit of IPPB therapy.

In these and future anticipated studies, the Committee has been guided by its goal of developing efficient, effective, and economic procedures for review to identify inappropriate utilization of ancillary services, the promotion of proper utilization through educational efforts directed towards providers of these services, and the development of specific criteria for utilization of selected ancillary services.

With the implementation of a new data system which provides the Foundation with on-line interactive system so that required profile analysis activities can be better carried out, the Data Committee under the chairmanship of William Atkinson, M.D., has become more active. This Committee, composed of three physicians and three hospital administrators, is in the process of reviewing profiles so that recommendations can be made to other committees of the Foundation for followup activities.

One of the primary activities of the Committee was the review of admission rates in Arkansas



hospitals. This resulted from the fact that the Health Standards and Quality Bureau has identified Arkansas as having one of the highest Medicare admission rates in the country. At the current time, our Medicare admission rate per 1,000 Medicare enrollees is approximately 25% above the national average. Continuing efforts will be made to either justify this rate or to take action which can have a positive impact.

All the activities of the Foundation continue to be carried out under the direction of these physician committees. The active involvement of the physicians on these committees, as well as the involvement of physicians in the PSRO Program at the local hospital level, has assured that peer review is kept in the hands of local physicians. All decisions affecting physicians have and will continue to be made by their peers, their fellow physicians practicing in Arkansas.

The Foundation must continue to address those issues raised at the local level, as well as respond to the pressures applied by the Health Standards and Quality Bureau. To do this requires physician involvement so that modifications can be made in the various review methodologies. To this extent, the physicians are continually looking for better ways to perform review. Recently, the Board of Directors ap-

proved a modification in the monitoring of concurrent review. Previously, the Foundation has used a random selection system in hospitals to identify records for evaluation as to the effectiveness of the review process. Hospital UR Committees were asked to comment on these individual cases and final determinations made as to whether the patient needed to be at the acute care level were then made by physicians within the Foundation.

With an interactive data system now available, variation areas within individual hospitals can be identified and more selective monitoring can occur specifically addressing those variation areas. A pattern analysis monitoring procedure can thus be instituted which will have more potential for impact instead of analysis of individual and unique medical records.

As you can see, many changes are occurring. We hope that with these changes comes more flexibility so that we, as a PSRO, can truly have impact on the quality of care and the utilization of services and items. Again, this will not be possible without active physician involvement. It is only through the participation of local physicians that we can assure the continuation of peer review, thus keeping review out of the hands of non-physicians—those not qualified to do it.



April, 1980

# THE JOURNAL OF THE Arkansas MEDICAL SOCIETY

Vol. 76 No. 11

FORT SMITH, ARKANSAS

104th Annual Session  
Arkansas Medical Society  
Arlington Hotel, Hot Springs, Arkansas, April 20-23, 1980

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# Monitoring patient response to Valium® (diazepam/Roche)

## Assessing initial response to therapy

During the first follow-up visit after initiating therapy, both physician and patient should determine if Valium (diazepam/Roche) is having the desired effect. Most patients will promptly report a feeling of relaxation and relief of anxiety-linked symptoms such as insomnia, headaches, palpitations and hyperventilation. You will probably observe that the patient is calmer and more relaxed. If, however, patient response does not measure up to expectations, a reevaluation of the patient's profile with modification of the dosage regimen should be considered.

## Making dosage adjustments

START	ADJUST

With any psychoactive medication it is good medical practice to initiate therapy at base dosage levels and titrate to the patient's needs. With Valium, experience has shown that 5 mg t.i.d. is usually sufficient although some patients with severe or persistent anxiety may require higher dosages initially. In geriatric or debilitated patients, the recommended dosage is 2 to 2½ mg once or twice daily.

When anxiety fluctuates, as is common with most patients, the dosage may be adjusted as needed during the course of therapy; three strengths in scored tablets give you unmatched flexibility and simplicity in individualizing dosage.

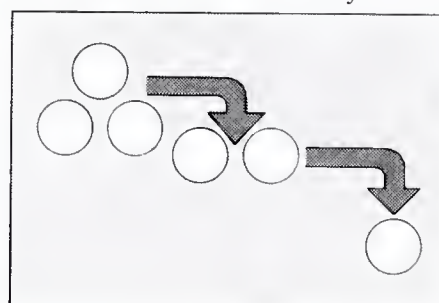
## Evaluating progress toward therapeutic goals

SET GOALS						
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

At the beginning of therapy it is now common practice for both physician and patient to establish treatment goals and to estimate the amount of time needed to achieve them. Then the patient knows what to expect and when to expect it.

Some physicians find that compiling a checklist of presenting symptoms and complaints is useful for assessing the patient's response from visit to visit. In this way, progress toward attainment of the therapeutic goal is reviewed at regular intervals. As patients feel their symptoms abate and begin to develop insight into the sources of their anxiety and psychic tension, the checklist can be expected to dwindle.

## Discontinuing pharmacologic intervention



When you decide to discontinue therapy, tapering dosage is good medical practice. Although rarely necessary after short-term treatment with Valium, gradual dosage reduction is advisable for patients who have been on extended therapy. This gradual discontinuance should preclude either recurrence of pretreatment symptoms or development of untoward side effects. Symptoms of withdrawal have almost always been associated with abrupt discontinuance of therapy at higher dosages taken continuously over long periods of time.

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Before prescribing, please consult complete product information, a summary of which follows:

**Indications:** Tension and anxiety associated with anxiety disorders, transient situational disturbances and functional or organic disorders; psychoneurotic states manifested by tension, anxiety, apprehension, fatigue, depressive symptoms or agitation; symptomatic relief of acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in skeletal muscle spasm due to reflex spasm to local pathology, spasticity caused by upper motor neuron disorders, athetosis, stiff-man syndrome, convulsive disorders (not for sole therapy).

The effectiveness of Valium (diazepam/Roche) in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

**Contraindicated:** Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma, may be used in patients with open angle glaucoma who are receiving appropriate therapy.

**Warnings:** Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses. Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months. After extended therapy, gradually taper dosage. Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

**Usage in Pregnancy:** Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

**Precautions:** If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed, drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

**Side Effects:** Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice, periodic blood counts and liver function tests advisable during long-term therapy.

**Dosage:** Individualize for maximum beneficial effect. *Adults:* Tension, anxiety and psychoneurotic states, 2 to 10 mg b.i.d. to q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; adjunctively in skeletal muscle spasm, 2 to 10 mg t.i.d. or q.i.d.; adjunctively in convulsive disorders, 2 to 10 mg b.i.d. to q.i.d. *Geriatric or debilitated patients:* 2 to 2½ mg, 1 or 2 times daily initially, increasing as needed and tolerated. (See Precautions.) *Children:* 1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use under 6 months).

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The Health Center of Pulaski County will accept applications for Medical Director for Urban Health Initiative program until May 1, 1980. Applicant must be Board Certified in Family Practice. Duties include supervision of clinic staff and NHSC physicians. Experience in group practice, administration, or teaching preferred. Salary \$45,000. Send resume with references to: Health Center of Pulaski County, P. O. Box 1174, Little Rock, AR 72203, or call (501) 372-2643.



# THE JOURNAL OF THE *Arkansas* MEDICAL SOCIETY

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## SCIENTIFIC ARTICLES

Characteristics of Continuing and  
Noncontinuing Patients in a  
Teenage Contraceptive Clinic ..... 453  
*L. L. Doyle, Ph.D., L. Selman, M.D.,  
and T. Nestrud, R.N.*

Act 817 of 1979: Arkansas' New  
Involuntary Commitment Law .... 457  
*Larry R. Faulkner, M.D.*

Grand Rounds: "Frontiers in  
Hepatitis Research" ..... 464  
*Michael D. Hightower, M.D., and  
E. Clinton Texter, Jr., M.D.*

## FEATURES

Office Orthopaedics: "Office  
Management of Common  
Forefoot Disorders" ..... 471  
*H. Austin Grimes, M.D.*

ECG of the Month ..... 473  
*John W. Watson, M.D.*

Pediatric Review: "Management  
of Childhood Asthma" ..... 474  
*Paul Martin Fiser, M.D.*

Editorial: "The Stroke  
Problem Revisited" ..... 478  
*Ray Jonett, M.D.*

Medicine in the News ..... 479

Resolutions ..... 482

Keeping Up ..... 483

Personal and News Items ..... 484

New Members ..... 485

Things to Come ..... 489

Obituary ..... 489

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## Characteristics of Continuing and Noncontinuing Patients in a Teenage Contraceptive Clinic

L. L. Doyle, Ph.D., L. Selman, M.D., and T. Nestrud, R.N.

### SUMMARY

A review of 669 patients seen in a public health teen age contraceptive clinic over a five-year period revealed that 49.6% of the patients' records had been closed. Among these, 41.7% had been closed after a single visit. Highest overall discontinuation rates and highest single visit closures occurred among the youngest groups, those for whom pregnancy is least desirable. In most cases, information regarding reasons for closure could not be obtained by standard follow-up methods because of the confidentiality guaranteed to teens. Questionnaires prospectively designed pointed out strengths and weaknesses of the clinic. Data from these two sources were combined with an analysis of the two groups by age and race in an effort to determine and understand differences between the continuing and noncontinuing teens, an essential first step in switching them from the latter to the former group.

### INTRODUCTION

In the past few years the public has become aware of the epidemic proportion of teenage pregnancies. Of 21 million teens 15-19, 11 million are sexually active, seven million males, four million females. One-fourth or one million of these teenagers become pregnant each year. These pregnancies, mostly illegitimate, unplanned, and unwanted, not only carry increased risks of morbidity and mortality to mother and baby during the pre and perinatal period, but also have far-reaching social and economic consequences. Teenage mothers are more likely to drop out of school, less likely to be employed, less likely if married to stay so, more likely to be on welfare. The chil-

dren are more likely to die in the first year of life, or if they live, to be children who are unstable emotionally and psychologically as well as physically.<sup>1</sup>

Efforts to combat the problem have been twofold, provision of contraceptive services to and education of teens.

Maturing a sexually active teenager into a sexually responsible reproducer is a two-step process. First, and perhaps most difficult, is providing the initial impetus for non-contraceptors to elect birth control, and second is the problem of convincing the teen to continue to use some method of contraception. This latter problem, while often overshadowed by the former, may involve a large segment of teens who have attended any contraceptive clinic.

During the five years the Public Health Department Teen Clinic has been in existence in Little Rock, 669 patients have been enrolled. As of September 1, 1978, 49.6% of these records had been closed. This study was undertaken to determine if there were observable differences between continuing and noncontinuing teen patients that would enable us to identify patients who are "high risk" for dropping out. Many teens, even though they have made the initial decision to use birth control, do not persevere in its use, and while we cannot equate clinic dropout with nonuse, it is probable that the majority of noncontinuing patients were less likely to be consistent contraceptors.

### MATERIAL AND METHODS

The population was composed of 669 patients age 11-19 from Pulaski County, Arkansas. Fifty-eight and one-tenth percent of the patients were black, 41.9% white. Clinics were held one afternoon each week, and patients could receive an appointment by telephoning the clinic.

Records from open and closed files were re-

From the Department of Obstetrics and Gynecology of the University of Arkansas College of Medicine, 4301 West Markham Street, Little Rock, Arkansas 72201, and the Arkansas Department of Public Health, 4815 West Markham Street, Little Rock, Arkansas 72201.

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viewed and data regarding age, race, previous parity, choice of contraceptive method, method complications, method failure, duration of clinic enrollment, and number of visits were compared. Reason for dropout was included when it could be determined, which, initially, was less than 50% of the cases.

Efforts were made to reach dropouts to determine the reason for closure; however, many teens could not be contacted without violating the confidentiality guaranteed them.

In an attempt to approach the problem another way, approximately 50 teens attending clinic over a two-month period were asked to write down their age, whether or not it was their first clinic visit and, if they were to stop coming to clinic, what did they think the reason would be.

RESULTS

The age and race of continuing and noncontinuing contraceptors are summarized in Table I. The median age of first clinic visit for blacks is 16 years for the continuing patient, 17 for the noncontinuing, while that for whites is 17 for the continuing and 16 for the noncontinuing. The age of first intercourse is an average of one and one-half years less than the age of first clinic visit. Twenty-seven and five-tenths percent of continuing contraceptors have been pregnant before the initial clinic visit compared to 22.3% of noncontinuing patients.

The methods chosen at first visit vary little between the two sets. Eighty-four percent chose orals while 10% chose IUD's. Three percent of

those selecting IUD's in the closed files were not inserted, generally because they did not return during their next menstrual period for insertion. All patients who could not begin their chosen method of contraception the day of their initial visit were supplied with foam and condoms. This may be the only method some teens ever used as 41.6% of the closed records were closed after a single visit. The younger the patient, the more likely the single visit closure as seen in Table II.

The results of the questionnaire are summarized in Table III, which also includes actual reasons given for closure of those charts where such data could be obtained.

DISCUSSION

The high dropout rate of 49.6% encountered in our teen clinic is distressing, but is not unusual.<sup>2,3</sup> The large number of patients lost to follow-up makes it impossible to do valid statistical analyses on the groups. It is probable that some of these patients may have either moved

TABLE II.  
RECORDS CLOSED AFTER ONE CLINIC VISIT

Age	Total Number	Total Number	Records
	Records	Closed Records	Closed After Single Visit
11	1	1	1
12	1	1	1
13	24	14	11
14	59	33	15
15	107	49	25
16	135	68	26
17	154	76	26
18	130	65	21
19	58	25	12
Total	669	331	138

TABLE I.  
AGE AND RACE OF CONTINUING AND  
NONCONTINUING TEEN CONTRACEPTORS  
Continuing/Noncontinuing

Age	Black	White	Total
11	0/1	0/0	0/1
12	0/1	0/0	0/1
13	6/13	4/1	10/14
14	22/22	4/11	26/33
15	43/30	15/19	58/49
16	44/26	23/42	67/68
17	38/38	40/38	78/76
18	40/26	26/38	66/64
19	24/15	9/10	33/25
Total	217/172	121/159	338/331
B = 389	58.1%	55.7%	Blacks continue
W = 280	41.9%	43.2%	Whites continue
669			

TABLE III.  
REASONS FOR CLOSURE

	Actual <sup>1</sup>	Questionnaire <sup>2</sup>
	(%)	(%)
Moved from area	12.3	17.5
Not interested	7.8	3.5
Obtaining services elsewhere	9.3	7.0
Desires pregnancy	1.2	7.0
Unplanned pregnancy	15.1	7.0
Didn't like clinic	0.0	10.5
Other (too old, parents finding out, forgot)	0.0	21.2
Unknown (or no answer)	46.9	26.3

1. Retrospective study  
2. Prospective study for 50 cases

from the area or become pregnant. Those who moved or who were obtaining services elsewhere were not considered. The remaining group, those in the area who were sexually active and in need of service, are of foremost concern. The single largest reason for closure (16.3%) was pregnancy, planned in only 1.2% of cases and unanticipated in the remaining 15.1%. In almost none of these teens on whom we have records was method failure cited.

A subset of the closed group was 24 (7.2%) teens who were planning sexual activity, but were not currently active at first visit although all stated they were planning coitus soon. In none of the closed cases nor on the questionnaire was cessation of sexual activity cited as a reason for dropping out, although the category of "not interested" (7.8%) may reflect this factor. Two patients who dropped out and then returned stated they initially stopped attending clinic because they were sexually inactive.

Contrary to the findings of Kantner and Zelnick<sup>4</sup> that previously pregnant teens are more likely to use pills or IUD's, our study found similar numbers of previously parous in continuing (27.5%) and noncontinuing (22.3%) patients. A finding that would tend to bear out Furstenberg's<sup>5</sup> observation that contraceptive vigilance tended to decline among young mothers after a few months of use, was that, in our study, of those who became pregnant (3.8% in the open 14.9% in the closed files), over 50% (51.7% open, 69.2% closed) had been pregnant before.

Our inability to contact most of our dropout population forced us to seek answers through use of an indirect prospective questionnaire. Since the inception of the clinic, patients had been filling out questionnaires regarding their feelings about the clinic, its personnel and services. Other than an occasional comment that the whole procedure took too long, the teens were enthusiastic and positive in their response. After the prospective study, however, 10.5% said that they might not return because they didn't like the clinic, usually because of the length of time a visit required. In the prospective group a variety of reasons such as forgot, parents found out, not notified to return, no need for contraception, over 19, tired of method or clinic, or no transportation were also cited as possible reasons for discontinuing.

On a few occasions teens listed in the closed

file returned to clinic, and we were able to interview them. Of those dropping out and then returning, some stated they stopped taking the pill because it was too much bother or they were having complications on the pill. Some had subsequently become pregnant and now were returning postpartum for protection. One patient had completed this cycle twice.

The incidence of side effects with either pill or IUD is possibly related with clinic dropout as the rate of complications with pill (37%) and IUD (52.7%) in the closed records, is 22% and 31.3% in the open records; however, this reason for closure was not given in either the prospective questionnaire or in the closed records. The relationship between side effects and closure rate would appear substantiated by Hambridge<sup>6</sup> who reports a 0.5% complication rate with teens on orals and only a 2.5% dropout. It might be well to note here that with the availability of lower dose pills and smaller copper IUD's, the incidence of side effects appears to have declined substantially in our clinic and elsewhere.

Our study unfortunately has many deficits of which we are well aware. Records when reviewed rarely contain the information investigators most need to answer questions as was the case in this retrospective look at our teen clinic. While we could determine the associations of such things as age, race, and choice of method with dropout rate after the fact, we had no data regarding self image, educational expectations, career goals, or risk-taking behaviors that would aid in predicting such decisions. We assume that teens who choose to discontinue contraceptive use differ from sexually active teens who have never used birth control, but we do not know how or why or even if the assumption is valid and our study gives no answers to such questions. Our study has heuristic value in the sense that it certainly raises more questions than it answers, and the findings are not totally meaningless.

While these data are drawn from a relatively small population, some of the findings may have wider application. Approximately one-fourth of the teens fail to return to clinic after their initial visit, thus maximizing the importance of this visit and its educational component. We must not only inform the teen of methods and their advantages and disadvantages, but we need to help her understand alternative methods so that, if she has problems with her first choice, she will



return rather than discontinue all contraception. Holding clinics for teens is implicit acceptance of them as sexually active individuals, and we support and applaud their decision to assume responsibility for their actions, but because of their immaturity we must be thorough and explicit all within the framework of an open, warm, and welcoming setting.

The high dropout rate, initially and subsequently, must be taken into account in advising and selecting contraceptive methods of choice for teens if we assume that many who stop attending clinic stop contraception. With a 15% pregnancy rate among patients on the pills in our clinic, many have voluntarily stopped using the method or are using it incorrectly. These alarming discontinuation and pregnancy rates of teens on the pills suggest that they may be better off with a method such as the IUD which requires little motivation but has other problems such as the possible increased incidence in pelvic infection.<sup>7</sup> We must weigh these risks against the knowledge that on other methods which she may drop, she risks pregnancy with its increased morbidity and mortality among adolescents.<sup>1</sup>

The patient who is at highest risk for dropping out, often after only one visit is, unfortunately, the patient under 15 to whom pregnancy will be the most devastating. To keep her and all our other teen patients who are sexually active using contraceptives, we must study further not only the reasons teens give us why they have dropped out, but what processes preceded the decision before we can choose the appropriate strategy for intervention. The excellent publication by Chil-

man<sup>8</sup> which reveals the pertinent literature on adolescent sexuality in a changing American society cites approximately 300 studies. It is apparent from all of these studies as well as our own that the problems involved have no easy solutions; however, it is also equally apparent when we consider the appalling consequences of children bearing children that we must continue to seek methods and motivations meaningful to sexually active teens so that they will choose and continue to use effective contraception.

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# Act 817 of 1979: Arkansas' New Involuntary Commitment Law

Larry R. Faulkner, M.D.\*

## INTRODUCTION

On July 19, 1978, a class action suit was filed in the U. S. District Court for the Eastern District of Arkansas<sup>1</sup> seeking to have the court declare unconstitutional Arkansas' involuntary commitment statutes. This suit, *Wessel v. Pryor*, set in motion a complicated series of hearings and discussions that ultimately culminated in the drafting of a new commitment law<sup>2</sup> which passed the 72nd General Assembly unanimously and was signed by the Governor on April 10, 1979. Many people and groups expended countless hours in this process. Just detailing the procedures necessary to produce this new law could itself be the subject of an extensive report, but this paper will instead review the stages in the commitment process, and attempt to offer some points of clarification.

Summary of the Involuntary Commitment Procedure (Figure 1).

Step 1: Filing the Petition. Any person who believes that another is "homicidal, suicidal, or gravely disabled . . . may file a verified petition (Figure 2.) with the Clerk of the Probate Court of the County in which the alleged mentally ill person resides or is initially detained."

It is essential to understand how the law de-

fines homicidal, suicidal, and gravely disabled. In all three, the basis for the designation must be by "reason of a mental illness, disease, or disorder." A person may be deemed homicidal if he "poses a significant risk of physical harm to others as manifested by a recent overt act or recent overt behavior evidencing homicidal or other violent assaultive tendencies." It is not necessary that a person actually do bodily harm to another to be called homicidal. All that is necessary is that he "poses a significant risk of physical harm." Making serious threatening gestures could constitute this risk.

A person may meet the definition of suicidal if he "poses a substantial risk of physical harm to himself as manifested by evidence of threats of or attempts at suicide or serious self-inflicted bodily harm or by evidence of other behavior or thoughts that create a grave and imminent risk to his physical condition." It is not necessary for a person to slash his wrists or swallow a bottle of pills to be designated suicidal. A clinical judgment can be made on the basis of less serious behavior of the patient or his thoughts about suicide.

The designation of gravely disabled applies to "a person who is unable to provide for his or her own food, clothes, or shelter." A significant level of impairment needs to be present here as many grossly psychotic patients would not be commit-

\*Deputy Commissioner for Community Mental Health Services and Affiliated Programs, 4313 West Markham Street, Little Rock, Arkansas 72201, and Assistant Professor of Psychiatry, University of Arkansas for Medical Sciences, 4301 West Markham Street, Little Rock, Arkansas 72201.

Figure 1. FLOW CHART OF COMMITMENT PROCEDURES

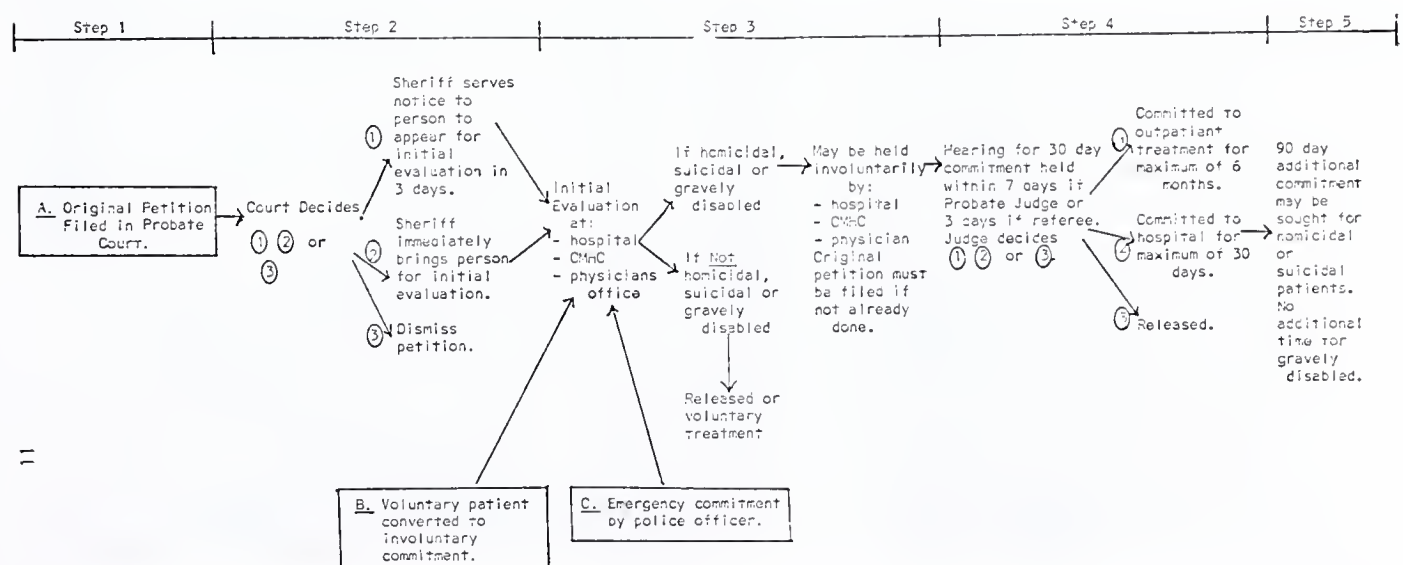




FIGURE 2. ORIGINAL PETITION<sup>3</sup>

IN THE PROBATE COURT OF \_\_\_\_\_ COUNTY, ARKANSAS  
IN THE MATTER OF \_\_\_\_\_

No. \_\_\_\_\_

Alleged Mentally Ill Person

PETITION TO COMMIT MENTALLY ILL PERSON

The undersigned on oath states that \_\_\_\_\_

a resident of \_\_\_\_\_ County, State of Arkansas, is believed to be mentally ill and  
ought to be committed to a suitable licensed hospital or outpatient mental health facility for the  
treatment of mental illness. He/She is believed to be \_\_\_\_\_

(Homicidal, Suicidal or Gravely Disabled)

as defined below.\*

Describe person's conduct, clinical signs and symptoms in detail, including time and place of occurrence. Such description shall be limited to facts within the petitioner's personal knowledge. List names and addresses of witnesses having knowledge relevant to allegations contained in the petition. State how many times person has been involuntarily committed within last two years and whether or not successfully treated by medication in the past. Does the person only become homicidal, suicidal, or gravely disabled when not regularly taking the medication previously prescribed for this mental condition?

Conduct—Signs and Symptoms: \_\_\_\_\_

Time and Place of Occurrence: \_\_\_\_\_

Witnesses and Addresses: \_\_\_\_\_

Wherefore, this petitioner prays that the Court issue an Order of Commitment of

\_\_\_\_\_ to \_\_\_\_\_  
(Name of Respondent) (Hospital or Outpatient Mental Health Facility)  
for \_\_\_\_\_ care and treatment.

(Inpatient or Outpatient)  
My relationship to the mentally ill person is \_\_\_\_\_

and my address is \_\_\_\_\_

NOTE: The petitioner must supply the  
information requested on the reverse  
side of this petition.

PETITIONER

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_.

SEAL

My commission expires \_\_\_\_\_

Notary, Probate Judge, Probate Clerk, or Referee

**\*DEFINITIONS THAT SHALL APPLY FOR VOLUNTARY ADMISSIONS  
AND/OR INVOLUNTARY COMMITMENTS:**

**HOMICIDAL** refers to a person who suffers from a mental illness, disease or disorder and as a result of the mental illness, disease or disorder poses a significant risk of physical harm to others as manifested by a recent overt act or recent overt behavior evidencing homicidal or other violent assaultive tendencies.

**SUICIDAL** refers to a person who suffers from a mental illness, disease or disorder and as a result of the mental illness, disease or disorder poses a substantial risk of physical harm to himself as manifested by evidence of threats of or attempts at suicide or serious self-inflicted bodily harm or by evidence of other behavior or thoughts that create a grave and imminent risk to his physical condition.

**GRAVELY DISABLED** refers to a person who is unable to provide for his or her own food, clothes, or shelter by reason of a mental illness, disease or disorder.

table as gravely disabled. Although bizarre and delusional, they still can provide their own food, clothing, and shelter. In practice some of these patients may need to be judged incompetent to manage their person or funds rather than committed as gravely disabled.

The law requires that the person who files a petition must appear before a referee if one has been designated, and may be asked to appear before the Probate Judge. The petitioner must have first hand knowledge of the facts and these must be documented in detail on the petition. Heresay is not acceptable.

Step 2: Decision by the Court. After the petition is filed, "the court may:

- A. Direct the Sheriff to serve the person with a copy of the petition together with a notice to appear for an initial evaluation. Such evaluation shall be set by the Court within three days of the filing of the original petition. If such person is duly served and fails to keep the appointment, the Court shall issue an order of detention.
- B. Immediately issue an order of detention (Figure 3.) directing the Sheriff or family to transport the person for an initial evaluation and treatment, or
- C. Dismiss the petition."

The court makes a judgment, therefore, as to the merits of the petition and the imminence of the situation. If it appears that this is a chronic problem which has existed for some time, it is likely that an additional three days will make little difference and the court may order the person to present himself for an initial evaluation. If an emergency is evident, the court may order the person to be picked up immediately.

Step 3: Initial Evaluation. The person's initial evaluation may only be performed at a hospital, community mental health center or clinic, or the office of a licensed physician. After the initial evaluation, the law provides that person may be held involuntarily by the hospital, CMHC, or physician if:

- A. He or she is determined to be homicidal, suicidal, or gravely disabled.
- B. He or she is immediately advised of their rights (Figure 4.).
- C. An original petition is filed if that hasn't already been done, (Figure 2.).

If a physician is not immediately available for the initial examination, the law states that it

"may be performed by a licensed psychologist, psychiatric social worker, or psychiatric nurse working under medical supervision and direction." In such cases the supervising physician must be consulted by telephone prior to making any decision concerning the initial evaluation. If a person has been admitted to a hospital, he must be seen and evaluated personally by a physician within twenty-four hours. This section of the law was included in an attempt to address the real difficulty that many rural communities have in obtaining adequate physician supervision.

If it is determined at the initial evaluation that the person should be hospitalized, the Sheriff or the family is given the responsibility of transporting the person from the place of evaluation to the place of hospitalization. The court decides any disputes that may arise over transporting.

Step 4: Thirty Day Commitment Hearing. Within seven days of the person's detention, excluding weekends and holidays, the Probate Judge must hold a hearing for a thirty day commitment. The hearing may be held in any county of his Judicial District. The Judge may appoint a licensed attorney as a referee to hear the case, but if this is done, the hearing must be held within 72 hours of detention, excluding weekends and holidays. The person to be committed will most likely be required to be in attendance at this hearing.

At the time of the hearing, the court decides whether "clear and convincing evidence has been presented" that the person is homicidal, suicidal, or gravely disabled. If the proof has been met, the court may issue an order of commitment (Figure 5.) authorizing the detention and treatment of the person for a maximum of thirty days. Detention can only occur in a hospital which is defined in this act as "the Little Rock State Hospital, the inpatient unit of the George Jackson CMHC in Jonesboro, the University of Arkansas for Medical Sciences Hospital, the Veteran's Administration Hospitals or any private hospital with a fully trained psychiatrist on the active or consultant staff."

It is possible under the new law for the Court to commit a person to outpatient treatment for six months at the time of the thirty day commitment hearing. To do so however, it must be found "by clear and convincing evidence that:

- A. The person has been involuntarily com-



FIGURE 3. ORDER FOR DETENTION<sup>4</sup>

IN THE PROBATE COURT OF \_\_\_\_\_ COUNTY, ARKANSAS

\_\_\_\_\_ DIVISION

IN THE MATTER OF

No. PM \_\_\_\_\_

\_\_\_\_\_  
(an alleged mentally ill person)

ORDER FOR DETENTION, EXAMINATION AND HEARING

Now on this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_, comes on this matter for hearing, and from the petition to commit an alleged mentally ill person and other proofs and evidence before the Court, the Court doth find and order:

That the above-named person should be taken into custody and produced before \_\_\_\_\_ at the hour of \_\_\_\_\_ o'clock, \_\_\_\_\_.m., on the \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_, at the \_\_\_\_\_. The said examining physician or physicians shall examine the said person and report his (their) findings to the Court in writing.

It is further ordered that the alleged mentally ill person should be brought before this Court for a hearing at \_\_\_\_\_ o'clock, \_\_\_\_\_.m., on \_\_\_\_\_, 19\_\_\_\_, at the courthouse in \_\_\_\_\_, Arkansas, for purpose of determining whether there is clear and convincing evidence that the above-named person is mentally ill and that he(she) is homicidal, suicidal or gravely disabled as defined by Act 817 of the Acts of 1979.

That the Sheriff of \_\_\_\_\_ County, Arkansas, is directed to detain the above-alleged mentally ill person at the State Hospital in Little Rock or \_\_\_\_\_, until the time of the hearing, at which time the Sheriff is further directed to deliver the party to the Court in whatever County the Court may be sitting; provided, if it is determined at the initial evaluation that Respondent is not homicidal, suicidal or gravely disabled, he(she) is to be immediately discharged from custody and the petition shall be dismissed.

It is further ordered that a copy of this Order, a copy of the petition and a copy of a statement of rights be served upon the person herein named at the time he(she) is taken into custody.

IT IS SO ORDERED.

\_\_\_\_\_  
PROBATE COURT

RETURN

STATE OF ARKANSAS }  
COUNTY OF \_\_\_\_\_ }

I have this day duly executed this Order for detention, examination and hearing by serving a copy thereof on \_\_\_\_\_ by taking him (her) into custody and performing the other duties prescribed in said Order this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_.  
(alleged mentally ill person)

\_\_\_\_\_  
SHERIFF

By \_\_\_\_\_  
D.C.

- mitted on at least three prior occasions within the last two years.
- B. The person's mental illness, disease or disorder is one that has been successfully treated with medication in the past.

C. The person only becomes homicidal, suicidal, or gravely disabled when not regularly taking medicine previously prescribed for his condition."

This section was included in the law in an at-

#### FIGURE 4. STATEMENT OF RIGHTS SERVED ON RESPONDENT<sup>5</sup>

1. You have the right to the assistance of counsel, including the right to a court-appointed attorney if you are an indigent.
2. You and your attorney have a right to be present at all significant stages of the proceedings and at all hearings; except your attorney shall not be entitled to be present upon your examination by the physician or any member of his staff pursuant to an evaluation, whether initially or subsequently.
3. You have the right to present evidence in your own behalf.
4. You have a right to cross-examine witnesses who testify against you.
5. You have a right to remain silent.
6. You have a right to view and copy all petitions, reports and documents contained in the court file.

ASH-'79-AJDCF-3

#### FIGURE 5. ORDER OF COMMITMENT<sup>6</sup>

IN THE PROBATE COURT OF \_\_\_\_\_ COUNTY, ARKANSAS

\_\_\_\_\_ DIVISION

IN THE MATTER OF

No. PM \_\_\_\_\_

\_\_\_\_\_  
(an alleged to be a mentally ill person)

#### ORDER OF COMMITMENT

By virtue of a petition filed in the above-entitled matter and,

IT NOW APPEARING TO THE COURT by clear and convincing evidence that said \_\_\_\_\_ is mentally ill and that he (she) is homicidal, suicidal or gravely disabled as defined in Act 817 of the Acts of 1979.

NOW, THEREFORE; IT IS HEREBY CONSIDERED, ORDERED AND ADJUDGED that said \_\_\_\_\_ be and he (she) is committed to the Arkansas State Hospital at Little Rock, Arkansas.

IT IS FURTHER ORDERED that said above-named person be delivered promptly and safely to the Arkansas State Hospital at Little Rock, Arkansas by the Sheriff of \_\_\_\_\_ County, Arkansas.

Dated this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_.

\_\_\_\_\_  
PROBATE JUDGE

ASH-'79-AJDCF-7



tempt to deal with those patients requiring medication for their emotional problems but refusing to take it. The usual scenario is one of a large man with Paranoid Schizophrenia who repeatedly does well on medication in the hospital, is discharged, fails to keep follow-up appointments, becomes acutely psychotic and dangerous, and requires several police officers to force his return to the hospital. It will now be possible to intervene in this person's care before his condition has deteriorated to such an extent.

**Step 5: Additional Ninety Day Commitments.** If a person has been committed as homicidal or suicidal, an additional ninety day commitment may be requested if two psychiatrists verify the necessity in writing. It must be demonstrated that the person continues to be homicidal or suicidal during his hospitalization. One of the verifying psychiatrists must be the primary therapist, but the other must not have been involved in the treatment of the patient or his family. Both psychiatrists may be members of the staff of the same facility, however.

The hearing for an additional ninety day commitment must occur before the end of the thirty day commitment period but it is not necessary for either the patient or the verifying psychiatrists to be in attendance unless requested by the court. This will prevent much of the needless transportation of patients and staff back and forth between the hospital and the court.

If a person has been committed as gravely disabled, only the thirty day commitment period is permissible. It should be possible to mobilize social and family support or arrange for guardianship during that period of time.

A new original petition may be obtained on a person at any time after their release from care, in which case the process begins again.

#### NOTES ON THE COMMITMENT PROCEDURES

1. The "Least Restrictive Doctrine" applies to all steps in this process and the treating physician has the authority to release the person as soon as he feels it's clinically appropriate.
2. No one who takes part in the commitment process can be held criminally or civilly liable for his actions provided they follow the law and act in good faith.
3. If the petitioner does not have his own lawyer, the Prosecuting Attorney represents him at the required hearings. The subject of the

commitment proceedings is represented by his own attorney or a court appointed counsel.

4. During the initial period of evaluation and treatment, only psychotherapy and oral or short-acting intramuscular medication may be used to treat the patient. Long-acting intramuscular medications such as Fluphenazine Decanoate, electroconvulsive therapy, and psychosurgery may not be used.
5. During the thirty and ninety day commitment periods, both short- and long-acting medications are permissible. ECT may be used only if the court is presented with "clear and convincing proof" that it is necessary. Psychosurgery is forbidden.
6. It must be remembered that involuntary commitment is *not* an adjudication of incompetency and that these persons have all the rights guaranteed them under the U. S. Constitution. Specific patient rights are included in the law as listed in Figure 6.
7. This law does not affect the statutes applying to drug and alcohol commitments.

#### CONVERSION OF VOLUNTARY COMMITMENT TO INVOLUNTARY COMMITMENT

From time to time patients who have voluntarily admitted themselves to a hospital request to leave and it is deemed inappropriate by the treating staff to let them do so. Such patients may be legally held involuntarily if the following procedures are observed:

- A. Within one hour of the patient's request to "any hospital employee," he must be provided with a written statement advising him of his rights (Figure 4).
- B. He must also be "provided with an acknowledgement confirming that he has been advised of his rights." If he refuses to sign the acknowledgement, the refusal must be noted in the patient's chart by two eyewitnesses.

Commitment procedures then commence with Step 3 in the above process.

#### EMERGENCY COMMITMENTS

Although not titled as such, the law provides for emergency commitment by stating that "Whenever it appears that a person is homicidal, suicidal, or gravely disturbed (sic) . . . and immediate confinement appears to be necessary to avoid harm to such persons or others, any law enforcement officer, on his own initiative or at the request of any interested citizen, may take

### FIGURE 6. LIST OF PATIENTS' RIGHTS

1. To wear his own clothes; to keep and use his own personal possessions including his toilet articles, unless during acutely suicidal or agitated states this might prove dangerous to the patient.
2. To keep and be allowed to spend a reasonable sum of his own money for canteen expenses and small purchases.
3. To have access to individual storage space for his private use.
4. To see visitors each day.
5. To have reasonable access to a telephone, both to make and receive confidential calls.
6. To have ready access to letter writing materials, including stamps, and to mail and receive unopened correspondence.
7. To refuse convulsive treatment including, but not limited to any electroconvulsive treatment, any treatment of the mental condition which depends on the induction of a convulsion by any means and insulin coma treatment, except as provided under this Act.
8. To refuse psychosurgery.
9. To be respected as an individual with dignity and unique value.
10. To be informed of hospital rules and regulations applying to conduct while hospitalized.
11. To be fully informed when asked to sign a treatment permit.
12. To be seen by the assigned physician and/or treatment team without undue delay and to be seen at intervals thereafter.
13. To obtain from the physician or the treatment team, complete current information concerning diagnosis, treatment, and prognosis in terms that can be understood. The patient has the right to know by name the physician responsible for coordination of treatment.
14. To expect all communications and records pertaining to care and treatment will be treated confidentially and will not be released without proper authorization.
15. To refuse to participate in human experimentation research projects.
16. To refuse to be photographed for medical purposes.
17. To be visited and examined by physicians designated by the patient, the family, or the court. The patient shall be responsible for the expense incurred except when expenses are waived according to provisions of the state law.
18. To examine and receive an explanation of any hospital bills regardless of source of payment.
19. To be placed in an adjunctive therapy program if prescribed as a part of the treatment program, depending upon availability of facilities.
20. To be visited during established visiting hours by friends and relatives, and to be visited in private by the religious leader of his or her choice.
21. To file a complaint if there is evidence of discrimination because of race, color, sex, religion, or national origin.
22. To be offered another modality of treatment and to expect continuity of care when released.
23. To be free from harm, including unnecessary or excessive physical restraint, isolation, and medication. The giving of medication and/or refusal to administer medication shall not be used as punishment, or for the convenience of staff alone or in quantities that interfere with the treatment program.
24. To prompt medical care and treatment.
25. To religious freedom and practice.
26. To physical exercise and recreational opportunities.

said person immediately for an initial evaluation . . . ”

Once again, commitment procedures then commence with Step 3.

### COMMENTS

While this new law does offer a major improvement in the commitment process, those of us who were involved in its development realize that several modifications may need to be made as we gain experience in its implementation. Conferences and workshops are being held at various community mental health centers around the State to serve as an educational forum as well as to receive feedback and opinions as to what changes need to be made in the law during the

next legislative session. Hopefully this process will be dynamic and result in improved mechanisms to serve these difficult patients.

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# Medical Grand Rounds: Frontiers in Hepatitis Research

Michael D. Hightower, M.D.\*, and E. Clinton Texter, Jr., M.D., F.A.C.P.\*\*

## GENERAL CONSIDERATIONS AND MARKERS

Viral hepatitis continues to be a major problem worldwide and in the United States with 500,000 cases of viral hepatitis occurring in the United States each year. Hospitalization costs alone are estimated at \$100 million a year — not to mention the time lost from work and personal suffering. For 30 years traditional knowledge has stated that viral hepatitis was caused by two entities: the infectious or Type A hepatitis and serum or Type B hepatitis. The diagnosis was based upon epidemiologic considerations and a history of parenteral exposure. We now have serologic markers for these different viruses and realize that the correct diagnosis can only be made serologically. It is now recognized that either virus can be transmitted parenterally or via the fecal-oral route, and that the incubation times show a great deal of overlap. Since 1974, it has been recognized that viral hepatitis is caused by one or more viruses which have proved to be neither Type A nor Type B, thus the term “non-A, non-B” viral hepatitis.

Beeson<sup>1</sup> has recently reviewed the growth of knowledge about hepatitis, and Czaja<sup>2</sup> has reviewed the frontiers of research in serologic markers of hepatitis A and B. Table I tabulates the recent explosive growth in our knowledge about hepatitis non-A, non-B (Hepatitis C). We will concentrate on the new developments in our knowledge of hepatitis, particularly in relation to non-A, non-B and spend the balance of our time on the current status of immunoprophylaxis of viral hepatitis.

Hepatitis A is epidemic in all parts of the world, and a large proportion of cases of hepatitis A are subclinical and anicteric. The mode of spread of hepatitis A is primarily by the fecal-oral route, most commonly by person-to-person contact. Poor sanitation and over-crowding are important factors in potentiating the spread of hepatitis A.

Hepatitis A can be transmitted parenterally, but this rarely occurs. The mortality of hepatitis A is low, on the order of 0.2-0.5% with fulminant hepatitis occurring in approximately 1-2% of cases. Hepatitis A is the best kind of hepatitis to have as no chronic carrier state has been detected, and hepatitis A does not lead to chronic hepatitis. The serologic marker for hepatitis A is anti-HAV. This can now be tested for in serum by RIA. This antibody remains elevated for years after infection and provides immunity. Approximately 25-30% of adults in the United States have this antibody.

Hepatitis B accounts for approximately 50% of sporadic cases of hepatitis. Viral markers have now been found in virtually all body fluids. Considerable evidence exists that hepatitis B may be transmitted by intimate personal contact and by sexual routes. Infectivity of hepatitis B is especially related to blood, and it may be transmitted in as little as .0005ml of blood. Mortality of hep-

**TABLE I.**  
**FRONTIERS IN HEPATITIS NON-A,  
NON-B RESEARCH**

- 1974 — Long-incubation post-transfusion hepatitis — non-A, non-B (Prince)<sup>3</sup>
- 1975 — Non-A, non-B post-transfusion hepatitis (Feinstone)<sup>4</sup>
  - Endemic non-A, non-B hepatitis in Costa Rica (Villarejos)<sup>5</sup>
- 1977 — Most post-transfusion hepatitis is non-A, non-B (Hoofnagle)<sup>7</sup> (Meyers)<sup>8</sup>
- 1978 — Transmission of non-A, non-B from man to chimpanzee (Tabor)<sup>9</sup> (Alter)<sup>10</sup>
- 1979 — Serial transmission of infectious agent of non-A, non-B agent in blood in chimpanzees (Tabor)<sup>11</sup>
  - Demonstration of circulating immune complexes in non-A, non-B hepatitis by Raji-cell RIA (Dienstag)<sup>12</sup>
  - CALD is common sequelae of non-A, non-B; may have better prognosis (Berman)<sup>13</sup>
  - Ultrastructural evidence for two agents in non-A, non-B hepatitis in chimpanzees (Shimizu)<sup>14</sup>
  - Antigen-antibody system associated with non-A, non-B hepatitis detected by indirect immunofluorescence (Kabiri)<sup>15</sup>

\*Fellow, Division of Gastroenterology, University of Arkansas for Medical Sciences, 4301 West Markham Street, Little Rock, Arkansas 72201.

\*\*Professor of Medicine, Physiology and Biophysics, Director, Division of Gastroenterology, University of Arkansas for Medical Sciences, 4301 West Markham Street, Little Rock, Arkansas 72201.

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atitis B is 5-10% in earlier studies, although this probably is somewhat high. Incidence of fulminant hepatitis is also 5-10%.

Approximately 5-10% of patients who are infected with hepatitis B will become chronic carriers. It is estimated that there are one million carriers in the United States and that there are 120-175 million carriers worldwide. Infection with hepatitis B can lead to chronic active hepatitis. Approximately 5-10% of cases will go on to develop chronic active hepatitis. We now have several serological markers for hepatitis B.

Non-A, Non-B hepatitis (NANBH) has been recognized since 1974,<sup>3</sup> when a prospective study showed that an agent other than hepatitis B was responsible for over 70% of cases of post-transfusion hepatitis (PTH).<sup>4</sup> It is now recognized that NANBH is responsible for anywhere from 80-100% of cases of PTH.<sup>6-8</sup> PTH continues to be a big problem in the United States even with the development of screening programs for presence of hepatitis B markers. PTH occurs most frequently when commercial blood is used. If only voluntary sources of blood are used, the rate of PTH drops anywhere from five to ten-fold. The rate of PTH with voluntary blood sources and with the HBs antigen screening programs is still 3 to 6 cases per 1000 units of blood transfused.

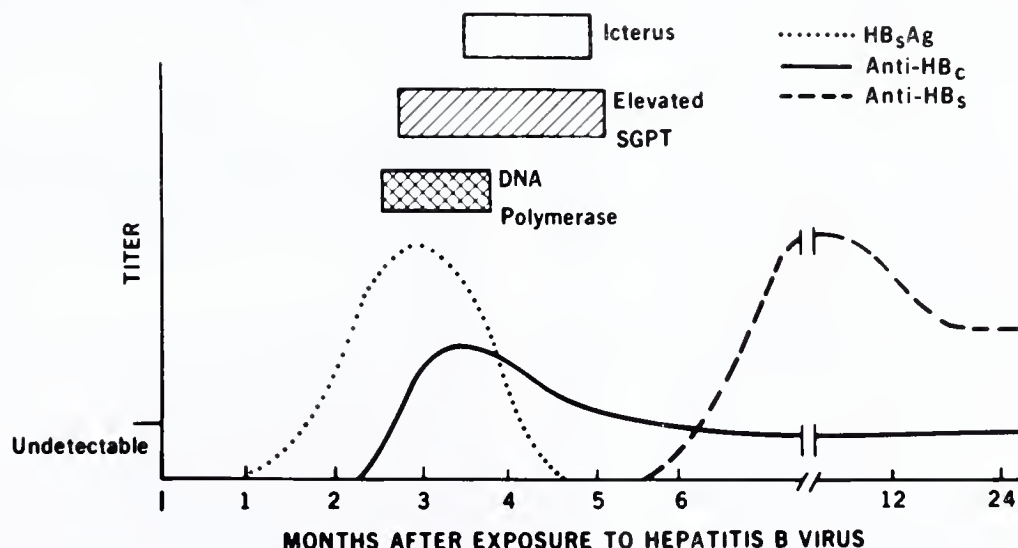
The epidemiology of NANBH is similar to hepatitis B in that it is usually spread via parenteral exposure to blood, and it is thought that it may be spread by intimate personal contact and

by sexual means.<sup>5</sup> NANBH is less severe in the acute phase than hepatitis B, and indeed, more cases may be subclinical and/or anicteric. A chronic carrier state for NANBH exists. As many as one-third of the cases of NANBH will progress to chronic active hepatitis.<sup>13</sup>

Trepo, Vitvitski and Prince<sup>16</sup> reported at the American Association for the Study of Liver Disease meeting in November, 1979, on the demonstration in serum and liver of an antigen specific

### TERMINOLOGY OF HEPATITIS B MARKERS

Dane Particles	— Intact hepatitis B virus. 42nm double-shelled virus. Composed of the HBsAg and HBcAg.
HBsAg	— Hepatitis B surface antigen. Originally called "Australian antigen" or HAA — 22nm; spherical and tubular forms.
HBcAg	— Hepatitis B core antigen; 27nm.
HBeAg	— "e" antigen. Location unknown — correlated with high degree of infectivity.
Anti-HBs	— Antibody to surface antigen. Detectable 2 weeks to 2 months after HBsAg disappears. Protective against re-infection. Present in 5-20% of U. S. population.
Anti-HBc	— Antibody to core antigen. Appears before anti-HBs. Marker of recent or current viral infection.
Anti-HBe	— Antibody to "e" antigen.



The serologic and enzymatic events associated with a typical case of Type B viral hepatitis

Figure 1.

Reprinted by permission from Paul V. Holland, M.D., and Harvey J. Alter, M.D.

The Clinical Significance of Hepatitis B Virus Antigens and Antibodies. Ref.: The Medical Clinics of North America, 59:849-856, July, 1975.



for long incubation non-A, non-B hepatitis (HBag). Photographs were presented of the virion which resembles that of hepatitis B. The new isolate of this non-A, non-B (hepatitis C) is composed DNA and is between 35 and 40 nm in size.

IMMUNOPROPHYLAXIS – VIRAL HEPATITIS

The potential risk of developing chronic active hepatitis or the carrier state after type B or non-A, non-B hepatitis is significant. A reasonable goal for us physicians would be to try to prevent or attenuate infection in those people who are exposed to hepatitis. The best way to do this would be with a vaccine against the various types of hepatitis viruses. Two different kinds of hepatitis B vaccines have been produced and are currently being tested and undergoing clinical trials. However, it will be several years in the future before these will be available. At the present time, our only means of preventing or attenuating infection is by immunoprophylaxis, the passive administration of antibodies to exposed individuals. Two types of gamma globulin preparations are clinically available. Immune serum globulin, or ISG, was previously referred to as simply “gamma globulin.” It is produced from outdated donor blood or from individuals who undergo plasmapheresis for this purpose. There are no established standards for anti-HAV titer or anti-HBs titer in ISG; the amounts of anti-HAV present in various lots range from 1:200 to 1:16,000. Present lots of ISG have an anti-HBs titer of 1:64. Lots prior to 1972 had an anti-HBs titer of less than 1:4. This recent increase in the amount of anti-HBs in our current ISG has lead to some of the controversy involved in the use of hepatitis B immune globulin.

ISG is safe to give. Adverse reactions are extremely low, on the order of about 1% when it is given intramuscularly. These reactions include pain at the injection site, hematoma, arthralgias, urticarial rash and fever. ISG is of proven value in prophylaxis but has no value as a therapeutic agent. The cost of ISG is low with a 2ml vial costing \$5.00 and a 10ml vial costing \$10.25 at the University Hospital Pharmacy.

Hepatitis B immune globulin (HBIG) is made from people who have a known high titer of anti-HBs. It was developed in 1971 on the hypothesis that a gamma globulin preparation with a high titer of anti-HBs might be effective in preventing hepatitis B. The SIG then in use was thought to be ineffective for preventing hepatitis B.

The controlled trials of HBIG have generated controversy over its use. The main problem with most of these trials is that HBIG was compared to a “placebo” ISG or one which contained no anti-HBs titer. People have questioned the validity of these studies because HBIG was not compared to our currently available ISG which does contain very small amounts of anti-HBs. The current U. S. standard for HBIG has an anti-HBs titer of 1:100,000. The cost of HBIG is significant with a 5 ml vial costing \$150.00. In most situations two doses are recommended, thus costing \$300.00 for immunoprophylaxis with HBIG as compared to ISG immunoprophylaxis costing \$5 - \$10.00. This economic factor has certainly entered into the controversy over the use of HBIG.

IMMUNOPROPHYLAXIS OF HEPATITIS A

The use of ISG for prevention of hepatitis A is not a controversial area because of the low cost of ISG and its proven efficacy over the years. ISG is recommended for both pre-exposure and post-exposure prophylaxis. The indications with dosages and frequency of administration are given in Table II.

The effectiveness of ISG in preventing “epidemic hepatitis” was established in 1944 in several clinical trials. ISG is 80-90% effective in preventing the development of hepatitis A. It should be given as close in time to exposure as possible because of the short incubation time of hepatitis A. ISG, as well as HBIG, is thought to work by passive-active immunization.<sup>32</sup> The dosage of .02 ml/kg as given in Table II was established in 1968. A dosage of .01 ml/kg has actually been shown to be effective. Recently, Drs. Leon-

TABLE II.  
ISG FOR PREVENTION OF HEPATITIS A  
U. S. Public Health Services Advisory Committee  
on Immunization Practices

Type of Exposure	Circumstances	Dose (ml/kg)	Frequency of Administration
Pre-exposure	Works with nonhuman primates	.05	4-6 months
	Travelers to tropical and developing countries		
	visit for < 3 mon.	.02	once
	visit for > 4 mon.	.05	4-6 months
Post-exposure	Contact with persons with acute hepatitis A (households, prisons, institutions for retarded)	.02	once

Not recommended for casual school, hospital, office or factory contacts.

ard Seeff and Jay Hoofnagle<sup>20</sup> have recommended increasing the dosage to .06 ml/kg. This is based on the possibility that anti-HAV titers are decreasing in our currently manufactured ISG and also because of the marked variability in the anti-HAV titers among lots of ISG.

### IMMUNOPROPHYLAXIS OF HEPATITIS B

Attempts at preventing hepatitis B using HBIG or ISG remain a very controversial area of medicine. As with hepatitis A we can consider pre-exposure usage and post-exposure usage of HBIG. Those people at high risk for developing hepatitis B include laboratory personnel and both patients and staff who work in dialysis units. Dr. Prince<sup>21</sup> has looked at the question of pre-exposure use of HBIG in a very large study utilizing dialysis staff and dialysis patients. Three similar, though smaller, studies have been done in Europe. The consensus of these pre-exposure studies of HBIG was that repeat administration of HBIG (every 4 months) could decrease the incidence of hepatitis B among dialysis patients. It has been shown that improved preventive measures without immunoprophylaxis are just as effective in preventing the spread of hepatitis B in dialysis wards. Because of this latter finding and the extremely high cost that would be involved, HBIG is not recommended for pre-exposure prophylaxis, such as in dialysis units or laboratory workers. Situations where post-exposure usage of HBIG would be considered include: (1) sexual contact (spouse relationship) of a patient with acute hepatitis B, (2) accidental needle-stick or mucus membrane exposure to HBsAg-positive blood, (3) babies born to mothers with acute hepatitis B in the third trimester, and (4) babies born to mothers who are chronic HbsAg carriers. Dr. Redecker<sup>23</sup> looked at the problem of hepatitis B in spouses of patients with acute hepatitis B. These spouses were randomized to either HBIG or a placebo ISG containing no anti-HBs. He found a 27% incidence of hepatitis B in the placebo-ISG group as compared to a 4% incidence of hepatitis B in those who received HBIG. Despite what looks like a very significant difference and what would be a recommendation for HBIG, the U. S. Public Health Service does not officially recommend HBIG in this situation. Whether current ISG with its anti-HBs titer of 1:64 would be as effective as HBIG, is not known. Redecker unfortunately did not include a current ISG in this study. No other studies looking at the

question of immunoprophylaxis of sexual contacts have been done.

Two large "needlestick" studies have been done. Both concerned about 400-500 personnel who had been accidentally stuck with needles contaminated with HBsAg-positive blood or had such blood either splashed in their eyes or their mouth during clinical work or laboratory procedures. Grady's<sup>24</sup> study randomized these people to either a high titer, intermediate titer, or normal titer HBIG preparation, having anti-HBs titer of 1:500,000, 1:5,000 and 1:50 respectively. At four months there was a significant difference between the high titer HBIG and the other titer preparations. At nine months, however, several cases of hepatitis B had developed in those patients receiving high-titer HBIG and thus there was no significant difference between the three different preparations at the end of the nine months. Grady and other authors concluded that these delayed cases were on the basis of a delayed incubation time induced by HBIG, rather than a re-exposure or a second needlestick.

In the second needlestick study which was a VA Cooperative Study reported by Dr. Seeff<sup>25</sup>, patients were randomized to HBIG with antibody titer 1:100,000 or a placebo ISG. The incidence of symptomatic hepatitis B in the placebo ISG group was approximately 8%. In the HBIG group, there was an incidence of acute hepatitis of 2%, a significant difference.

Grady's study showed that HBIG was no more effective than the "normal titer" HBIG which is equivalent to our current ISG. This would be a welcome finding in view of the vast cost difference; however, Grady's study did not include a control group or a true placebo group, so we cannot say that either preparation was effective. Seeff's study did show that HBIG is more effective than placebo in attenuating infection and reducing the number of symptomatic cases. Unfortunately, his study did not include current ISG. It is tempting to combine the results of both of these studies and conclude that current ISG is as effective as HBIG, but because of methodology this would not be valid.

It was learned from these needlestick studies that people who had pre-existing anti-HBs did not develop hepatitis B, and thus do not need immunoprophylaxis with HBIG. What is the chance of acquiring hepatitis B infection after an accidental needlestick with HBs antigen-positive



blood? This has been shown to be dependent mainly on the HBe antigen status of the donor. Grady noted in his study that the incidence of hepatitis was four time greater after exposure to an HBeAg positive donor as compared to those donors who were HBeAg negative. Alter, Seeff, et al,<sup>26</sup> noted that 14 of 18 people who were exposed to blood from HBeAg positive donors developed acute hepatitis B. It is noteworthy that all of these 14 cases were in the placebo ISG group.

Despite the somewhat conflicting results between the two big needlestick studies and the fact that HBIG has not been clearly shown to be superior over current ISG, HBIG is officially recommended by the U. S. Public Health Service for usage after accidental needlestick exposure.<sup>30</sup> The recommendation that two doses of HBIG be given is based on a study by Kline.<sup>34</sup> In a study similar to the needlestick studies, it was shown that 17% of those receiving one injection developed hepatitis as compared to 7% of those receiving two injections one month apart.

The U. S. Public Health Service's recommendations, which are rather strict for the use of HBIG, are given in Table III. The recommendations are limited to acute needlestick or mucosal exposure, and to babies born to mothers with acute hepatitis B in the third trimester. HBIG is not officially recommended for the sexual contacts of people with acute hepatitis B nor for the infants of mothers who are chronic HBsAg carriers. Vertical or maternal-infant transmission of hepatitis B virus (HBV) frequently results in a chronic carrier state in the baby. Areas of the world that have high vertical transmission rates of HBV also have high rates of HBsAg positive chronic active

hepatitis, cirrhosis, and hepatoma. Until recently, an effective immunoprophylaxis regimen for this situation had not been demonstrated. A single dose of HBIG was shown by Beasley and Stephens<sup>28</sup> to be ineffective in preventing the development of HBsAg carrier state in babies who were born to mothers who were chronic carriers. A recent study from the Netherlands reports that a multiple dose schedule of HBIG is effective in preventing development of this chronic carrier state in the infant.<sup>29</sup>

Recently, Dr. Seeff and Dr. Hoofnagle<sup>29</sup> have come forward with the idea of expanding the recommendations for usage of HBIG. While other experts in this area such as Krugman<sup>31</sup> and Mosely<sup>31,33</sup> have agreed with their recommendations, others have been critical and this has certainly generated much controversy. Drs. Seeff and Hoofnagle have recommended that the use of HBIG be expanded to the regular sexual contacts (i.e., spouse) of patients who have acute hepatitis B. They also feel that the use of HBIG should be extended to babies born to mothers who are chronic HBsAg carriers. These additional recommendations for HBIG are listed in Table IV with the dosages and frequency of administration. The recommendation for the neonatal usage is from Dr. Reesink.<sup>29</sup>

Before giving HBIG, it is important to document that the person actually has been exposed to blood that is HBsAg positive, or in the case of a sexual contact, that the patient does have acute hepatitis B with positive hepatitis B markers. It is also recommended that the exposed person be checked for susceptibility before giving HBIG. To do this, one should check for the presence of both HBsAg and anti-HBs in the exposed person. If he is already positive for HBsAg or has pre-

**TABLE III.**  
**HBIG FOR PREVENTION OF HEPATITIS B**  
**U.S. Public Health Services Advisory Committee**  
**on Immunization Practices**

Type of Exposure	Circumstances	Dose	Frequency of Administration
Post-exposure	Single acute exposure to HBsAg (needlestick or mucosal exposure)	HBIG .05-.07 ml/kg	Twice; ASAP within 7 days and repeat at 30 days
	Fetal exposure to mother with acute hepatitis B in 3rd trimester	HBIG .13 ml/kg	Once within 7 days of birth

*Not officially recommended for circumstances of sexual exposure to persons with acute or chronic hepatitis B nor for infants of a mother who is a chronic HBsAg carrier.*

**TABLE IV.**  
**ADDITIONAL RECOMMENDATIONS FOR HBIG**

Type of Exposure	Circumstances	Dose	Frequency of Administration
Post-exposure	Regular sexual contact of patients with acute hepatitis B	5 ml HBIG	Twice 5 ml ASAP and again in 1 month
	*(Check susceptibility of contact before giving HBIG)		
	Baby born to mother who is chronic HBsAg carrier	.05 ml HBIG	Within 2 days of birth then 0.16 ml/kg q month times 6

*\*If contact is already (+) for HBsAg or has anti-HBs, HBIG is not needed.*

existing anti-HBs antibodies, HBIG is not needed. This will occur in approximately 5-20% of cases. Should the HBs antigen and anti-HBs test not be readily available, it is recommended that the administration of HBIG not be delayed greater than 7 days after exposure. If the results of the susceptibility tests will be delayed longer than this, it is recommended that the first dose of HBIG be given. Should either the HBs antigen or anti-HBs then return as positive, the second injection can be cancelled. As infectivity is very closely related to the presence of the HBeAg, some have considered giving HBIG only if this test is positive. HBeAg continues to be primarily a research tool and is not yet clinically available.

### IMMUNOPROPHYLAXIS OF NON-A, NON-B HEPATITIS (NANBH)

As non-A, non-B hepatitis has only recently been recognized as a separate entity, it is not surprising that there are no official recommendations for immunoprophylaxis in this area. Indeed, no studies other than the use of ISG in prevention of post-transfusion NANBH have been done. Drs. Seeff and Hoofnagle have recently come forward with some recommendations for immunoprophylaxis of NANBH.<sup>20</sup> They recommend that ISG in a dose of .06 ml/kg be given for accidental needlestick and mucosal exposure, sexual contacts of patients with acute NANBH, and infants born to mothers with acute or chronic NANBH. These recommendations are based on some studies that show that current ISG can modify post-transfusion icteric NANBH.<sup>27</sup> The recommendations that it be given to the sexual contacts and the infants is based on the thought that the epidemiology of NANBH is similar to hepatitis B. It should be pointed out that no studies have been done to confirm the efficacy of ISG in these institutions. Other experts on immunoprophylaxis of hepatitis have criticized Drs. Seeff and Hoofnagle for being premature with these recommendations in the area of non-A, non-B hepatitis.

The subject of immunoprophylaxis of viral hepatitis is somewhat confusing and controversial. Use of ISG for immunoprophylaxis of hepatitis A is straightforward and there is general agreement. For the private practitioner, the confusion and controversy surrounding the use of HBIG is disconcerting. While there is an "official" recommendation for HBIG in the accidental needlestick exposure situation, it seems somewhat arbi-

trary that it is not also recommended to the spouses of people who have acute hepatitis B. We agree with the recommendations of Drs. Seeff and Hoofnagle that the usage of HBIG be extended to the sexual contacts of patients with acute hepatitis B and to the babies who are born to mothers who are chronic HBsAg carriers. In view of the high incidence of chronic active hepatitis and potential development of a carrier state following acute NANBH, it may be prudent at the present time to follow the above recommendations for using ISG in immunoprophylaxis of NANBH. Tables V and VI represent a summary of clinical situations and recommended immunoprophylaxis in the areas of contact exposure and percutaneous exposure. The recommendations given in these table are based on the expanded usage of HBIG and the use of ISG in immunoprophylaxis of NANBH suggested by Drs. Seeff and Hoofnagle.

**TABLE V.**  
**IMMUNOPROPHYLAXIS AFTER CONTACT EXPOSURE TO ACUTE VIRAL HEPATITIS**

<i>Index Case</i>		<i>Recommended Immunoprophylaxis for Exposed Contact</i>
<i>HBsAg</i>	<i>Circumstances</i>	
Positive	Acute hepatitis	HBIG, 5 ml immediately and in one month to regular sexual contacts only *(Check susceptibility)
Negative	Hepatitis does not follow blood transfusion	ISG, 3-5 ml immediately to all household contacts
Negative	Hepatitis follows blood transfusion	ISG, 5 ml immediately to regular sexual contacts

\*If HBsAg or anti-HBs present, HBIG not needed.

**TABLE VI.**  
**IMMUNOPROPHYLAXIS AFTER PERCUTANEOUS EXPOSURE**

<i>Donor Status</i>		<i>Recommended Immunotherapy for Exposure Contacts</i>
<i>HBsAg</i>	<i>Hepatitis</i>	
Positive	Present or Absent	HBIG, 5 ml ASAP and again in one month *(Check susceptibility)
Negative	Present	ISG, 3-5 ml immediately after exposure
Negative	Absent	No therapy needed

\*If HBsAg or anti-HBs present, HBIG not needed.

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# Office Orthopaedics

## Office Management of Common Forefoot Disorders

H. Austin Grimes, M.D.\*

Disorders of the forefoot have been common throughout the ages and are often given short consideration by most physicians. There seems to be an increase in the number of forefoot complaints, probably due to emphasis on sports activities such as jogging, tennis, etc. Therefore, an awareness of the variety of common disorders of the forefoot is presented.

The skin of the sole of the foot with its web of internal supporting structures has been likened to the tread of an automobile tire in function. To protect the foot, proper shoes should adequately protect the sole and not compress the toes or allow uneven metatarsal head pressure.<sup>1</sup>

Adequate evaluation of the forefoot should include history, the chief complaint, thorough examination of skin, nails, calluses, range of motion and tenderness. Circulation should be checked clinically when suspect, then Doppler evaluation should be employed.<sup>2</sup>

Blood tests should include CBC, uric acid, sedimentation rate, rheumatoid screening factor, and in suspected diabetics, fasting blood sugar and two hour post prandial determinations.

Standing x-rays, AP and lateral of the feet and occasionally tangential views of the sesamoids under the great toe and photographs (color photographs preferably) may be combined with a relatively recent innovation consisting of photographing the foot standing on a transparent Moire screen by mirrors to determine patterns of pressure on weight bearing.<sup>3</sup>

On the average, runners about double the speed

of joggers (12 miles per hour as opposed to 6 miles per hour) and subject the feet to sharp increases in stresses.<sup>4</sup> The various afflictions of joggers and runners usually are blisters, pain in the metatarsal heads, and occasionally stress fractures (March). These stress fractures may be late in appearing on x-ray and if the complaint persists, then re-x-ray in a few days may reveal the stress fracture which is most frequently found at the neck of the second metatarsal.

One of the more common complaints seen is hallux valgus (bunion) — often the term is used interchangeably, but in reality they are separate entities. This is seen in the splayed foot commonly, and when symptomatic, usually demands some form of treatment. It may vary from wider shoes to metatarsal bars with 1/4" drop-off on the soles of the shoes to surgical correction. We try to encourage conservative treatment for as long as possible and frequently these people will have hammer toe deformities which necessitate correction when the bunion is attacked surgically also. When inadequate shoes can be borrowed or found to make the patient comfortable, with or without inserts, then surgery must be resorted to. Another deformity in association with the splay foot is a bunion of the fifth metatarsal head (Tailor's bunionette) and when this is painful, it is better treated surgically as well.

Hallux rigidus of the great toe metatarsal joint is usually painful with any type of walking, with or without properly fitting shoes. Trauma is the inciting cause and clinical limitation with pain at the metatarsophalangeal joint, along with x-rays, diagnose the condition. Surgery is about the only effective treatment and there have been

\*Little Rock Orthopedic Clinic, P.A., 9500 Lile Drive, P. O. Box 5270, Little Rock, Arkansas 72215.



various methods from fusion to joint replacement, fusion being the more successful.<sup>5</sup>

Morton's neuroma, better termed endoneural vascular fibrosis by description,<sup>6</sup> is found most frequently between the third and fourth toes and their respective metatarsal heads. It is diagnosed by compressing the metatarsal heads and x-rays are usually of no value except in cases of concomitant rheumatoid arthritis. Surgery is the treatment of choice and consists of excising the lesion of the interdigital neurovascular complex. In neuromata associated with rheumatoids, the lesion may also be found between the first and second metatarsals as well as between the second and third. This condition often requires surgical resection of the metatarsal heads, the so-called Hoffman procedure.

Metatarsalgia is secondary to osteoarthritis and rheumatoid arthritis and is usually diagnosed by physical appearance, swelling and deformity and by x-ray. We have not found laboratory tests positive in most osteoarthritic cases, but frequently the ANA and sedimentation rate are positive in rheumatoid arthritis. Some of these cases will not be candidates for surgery and are better treated by shoe inserts with depressions over the prominences as determined by foot molds. The so-called metatarsal pads that fit inside the shoes have caused more pain than the condition for which they were prescribed. When conservative treatment is inadequate, surgical approach is indicated and can be fairly successful in relieving symptoms, therefore, this form of treatment should not be delayed too long.

Freiberg's infraction is an injury of the second or third metatarsal head and sometimes the fourth or fifth head. This appears to be subchondral necrosis of bone secondary to fatigue and when symptomatic, surgery appears to be the treatment of choice.<sup>7</sup>

Clavus ("interdigital" or soft corn) is predisposed by the apposition of two adjacent hard surfaces causing a painful hyperplasia of the epidermis. This condition is most commonly found in the fourth interspace at the level of the fourth proximal interphalangeal joint and fifth distal interphalangeal joint. This condition may be treated with local excision of corn and underlying bony prominence or more definitively by excision of the web space, removing bony prominences and syndactyly.<sup>8</sup>

Ingrown toenails (onychocryptosis), plantar warts and unusual gait pattern calluses are treated by improving nail trimming techniques, liquid nitrogen, and proper fitting footwear. When these foregoing treatments are unsuccessful, surgery is recommended. Specific surgery has been covered in other papers in the recent past as a series of articles.

Lastly, diabetic neuropathies are diagnosed by history, examination by Doppler, blood sugar determinations and are treated by proper hygiene care to the feet when mild. Surgery is indicated when these conditions are advanced and the Doppler, being very helpful in determining the level of amputation after the diabetes is controlled medically.

Wagner<sup>9</sup> suggested an ischemic index calculated by dividing ankle pressure divided by the brachial artery systolic pressure. This index will help predict healing in arteriosclerotics (over 0.35) and diabetics (over 0.45).

In summary, common conditions of the forefoot are presented and principles of sound medical evaluation are emphasized.

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## ELECTROCARDIOGRAM



## OF THE MONTH

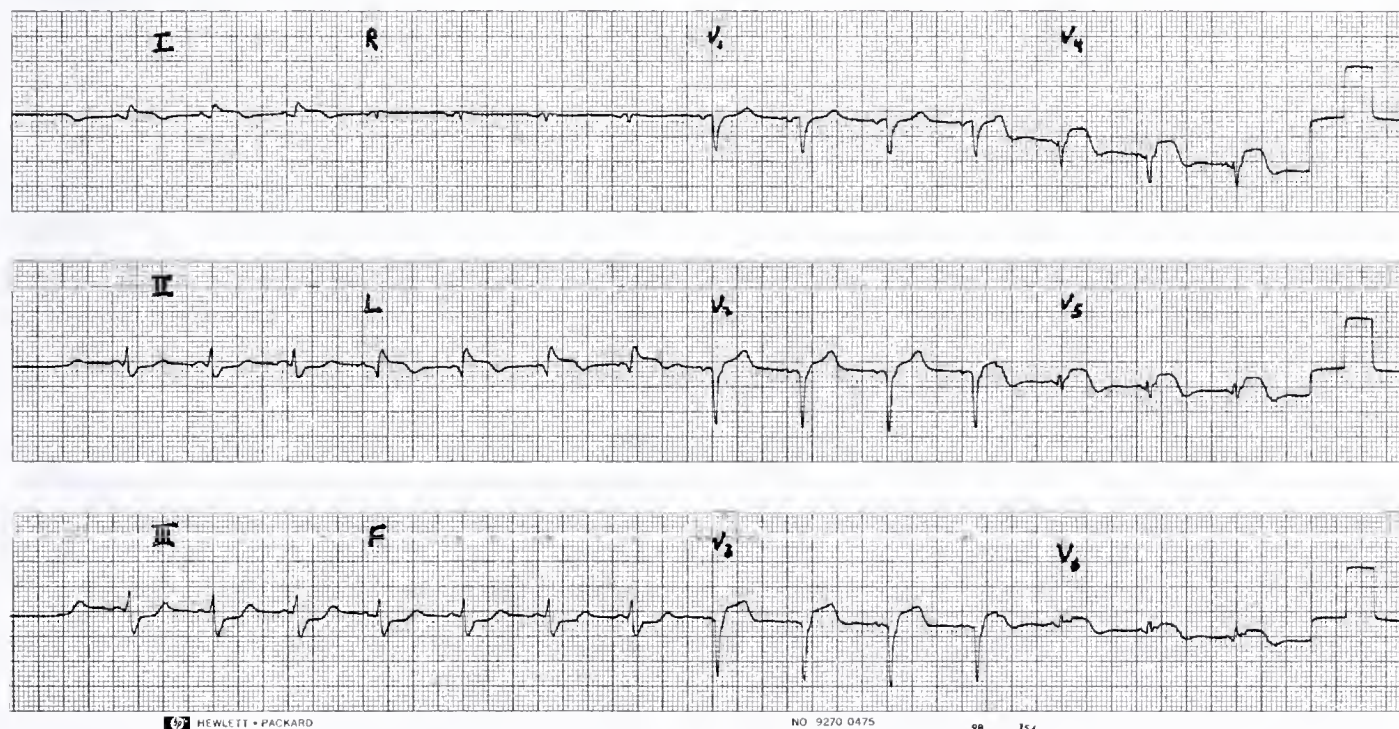
The Department of Cardiology, University of Arkansas College of Medicine

(See Answer on Page 482)

**HISTORY:** H. T. is a 50-year-old hypertensive male with a long smoking history. He presented to the hospital with a four-hour long episode of chest pain associated with syncope. His physical examination revealed a diaphoretic normotensive man with cool skin, rales, and an S3 gallop. His ECG is shown.

What should be done at present?

- A. Standard therapy for reflux esophagitis.
- B. Standard therapy for pericarditis.
- C. Temporary pacemaker.
- D. Prophylactic lidocaine therapy.
- E. Consider placement of a pulmonary artery pressure monitoring catheter.



John W. Watson, M.D.

Assistant Professor

Division of Cardiology

University of Arkansas for Medical Sciences

4301 West Markham

Little Rock, Arkansas 72201



# Pediatric Review:

## Management of Childhood Asthma

Paul Martin Fiser, M.D.\*

Bronchial asthma is probably the most common disorder among children requiring hospitalization. Although the death rate in the elderly from asthma is higher than in children, the morbidity of school days lost and changes in lifestyles are significant. An estimated 1.5 million children are affected by this problem. More than half develop symptoms before age five. Asthma accounts for one-third of all chronic health problems in children under seventeen years of age and nearly one-fourth of days lost from school.<sup>1</sup>

Although the basic underlying pathophysiologic mechanisms are virtually the same, children with asthma require special alterations in management because of such varied factors as growth and development, susceptibility to age-related infections, drug dosages, fluid replacement, and family-social interactions. Effective management involves environmental control of irritants and specific allergens, immunotherapy where indicated, and proper drug therapy.

### Environmental Alterations.

Allergens that may cause wheezing may be present in foods or in the air. The frequency that food allergens cause asthma is uncertain, being more common in infants than in older children or adults. Dietary restrictions with subsequent double-blind challenge on several occasions is the most informative manner to accurately document hypersensitivity to foods.<sup>2</sup> Lists of common food allergens and appropriate diets are readily available.<sup>3,4</sup> After a food has been withheld for three weeks, that specific food is reintroduced in the diet and the patient is observed for a reoccurrence of symptoms. Two trials and challenges are suggested to conclusively establish the diagnosis. Usually the offending food is withheld for at least one year. Restricted diets may lead to nutritional inadequacies and supplemental vitamins and minerals may be required. No patient should be challenged with a food that previously caused angioedema or urticaria.

### Inhalants:

Most sources of inhalant allergens can be avoided or modified. Animal dander is very sensitizing to many patients and removal of the cat or dog from the house is often helpful. Environmental control should be emphasized initially in the patient's bedroom. Here the child spends a majority of his time and steps to eliminate dust and irritants around the bed may prove helpful. Compliance is increased when written instructions are given to the patients (see The Dust-Free Bedroom, Table 1.).

TABLE 1.  
THE DUST-FREE BEDROOM

1. Steam or hot water heat is preferable to hot air. If there is a hot air furnace outlet in the room, a dust filter made of several layers of cheesecloth or some other adequate material (old nylon hose), may be installed and this filter changed frequently. Holes or cracks in the floor around heating or other pipes must be sealed. For this purpose, adhesive tape is useful. In addition, furnace filters should be changed or cleaned every 2-4 weeks.
2. For thorough cleaning, the room must be completely emptied, just as though you were moving. Empty and clean all closets, and if at all possible, store contents elsewhere. If this is not possible, keep clothing in zipper plastic bags and shoes in boxes off floor. Give the woodwork and floors a thorough cleaning and scrubbing to remove all traces of dust. Every inch of exposed or hidden surface must be made spic and span. The floor or linoleum should be oiled and waxed. Linoleum, if used, should be cemented to the floor.
3. The room should contain only one bed. If a second bed must be in the room, it must be also prepared in the same manner. Outside the room, the bed and springs should be scrubbed. Both box springs and the mattress should be covered with dust-proof plastic zipper encasements.
4. Use a dacron mattress pad and pillow. Do not use fuzzy wool blankets or feathered comforters. Use only washable materials on the bed. Sheets and blankets should be laundered frequently.
5. A wooden or metal chair which has been scrubbed may be used in this room. Washable throw rugs may be used on the floor. Plain light curtains washed once a week may be used on the windows. The room should contain a minimum amount of furniture or furnishings and no upholstered furniture. There should be no venetian blinds.
6. The room must be cleaned daily and given a thorough and complete cleaning once a week. Clean the floors,

\*Division of Allergy, Department of Pediatrics, University of Arkansas for Medical Sciences, 4301 West Markham Street, Little Rock, Arkansas 72201.

Mailing Address: Paul Martin Fiser, M.D., Department of Pediatrics, University of Arkansas for Medical Sciences, 4301 West Markham Street, Little Rock, Arkansas 72201.

- furniture, tops of doors, window frames, sills, etc., with a damp cloth with Endust. Air the room thoroughly.
7. Keep the doors and windows of this room closed as much as possible, especially when you are not using the room. Use this room for sleeping only. Dress and undress and keep clothing in another room or keep only currently used clothes in the closets.
  8. If the patient is a child, do not keep toys which will accumulate dust in the room. Do not use stuffed toys. Use only washable toys or of wood, rubber or iron. These should be stored in a closed toy box or chest.
  9. All animals with fur or feathers must be kept out of the room.

### Drug Therapy:

The primary drug used for reversible bronchospasms in the United States is theophylline. The optimal use of theophylline, however, requires individualization of dosage regimens so that the serum concentration is maintained within the therapeutic range of 10-20 ug/ml. The use of combination drugs is discouraged because of unwanted side effects from additional compounds when using the appropriate amount of theophylline.<sup>5</sup> The dosage of theophylline varies with age, weight and other factors. Theophylline in children is more rapidly metabolized and eliminated than in adults. The initial dose of theophylline for all ages should be the lesser of 16 mg/kg/day or 400 mg/day. This dose may be increased at three-day intervals till the maximum twenty-four hour dosages as noted in Table 2 are achieved or symptoms are controlled at lower dosages.<sup>6,7</sup> Liquid preparations (Elixicon suspension, Somophyllin elixir) or short-acting tablets of anhydrous theophylline (Elixophyllin, Theolair, Slophyllin) provide rapid absorption and adequate serum levels, but must be administered every six hours. Because trough-peak fluctuations may exceed 20 ug/ml<sup>8</sup> in the serum and some children act as "rapid-metabolizers," sustained-release preparations (Theodur, Slophyllin Gyrocaps, Theophyl-SR) may be more effective in maintaining consistent serum levels and dosing intervals are longer (Theodur, q 12 hr.). Peak serum concentrations occur usually one to two hours after administration of a rapidly ab-

sorbed preparation and six to eight hours after a sustained release preparation. Peak and trough levels are necessary guides to providing optimal theophylline therapy. Widespread use of the EMIT<sup>9</sup> method of determining serum theophylline provides the practicing physician with ready results, previously available only in regional medical centers. Theophylline should be started with the beginning symptoms of wheezing or coughing<sup>10</sup> and continued on a regular basis for 3-5 days. Common side effects include tachycardia, nervousness, and nausea. Convulsion, coma and death are noted with toxic dosages (> 20 ug/ml).

A beta-agonist is the second drug that may be used for the chronic asthmatic that is not well controlled on theophylline alone. Oral metaproterenol (Alupent, Metaprel) is the only agent available for children less than twelve. The dose is 0.5 mg/kg every four to six hours. Thus, for children 6-9 years of age, or less than 27 kg, one-half tablet (10 mg) or one teaspoon is given. For children over 9 years or greater than 27 kg, the dose would be 15-20 mg every four to six hours. Twenty milligrams is the maximum recommended dose. This drug may be used on a p.r.n. basis or continuously along with a theophylline compound. Common side effects include tachycardia, nervousness and nausea.

Terbutaline is a more selective beta-2 agonist with a longer half-life and may be used in children over 12 years old. The initial dose is 2.5 mg t.i.d. and may be increased to 5 mg t.i.d. It is also available in a subcutaneous, parental formulation (.0035-.01 mg/kg). The duration of action ranges between five and seven hours, with some bronchodilator action continuing for as long as eight hours.<sup>11</sup> Susphrine should not be given concomitantly with Terbutaline because of the side effects of two long-acting drugs. The most frequent side effect is skeletal muscle tremor that may interfere with handwriting or other fine motor movements.

### Cromolyn Sodium:

Cromolyn sodium has no bronchodilatory action but may prevent mediator release from mast cells. In mild to moderately severe asthmatics not completely controlled on theophylline and oral sympathomimetic, inhalation of cromolyn sodium may prove useful. The powder of one capsule is inhaled four times a day. If improvement does not occur in two weeks, it should be discontinued. It has been shown useful in in-

**TABLE 2.**  
**THEOPHYLLINE DOSAGES**

<i>Initial</i>	<i>Maximum Pre-measurement Dose</i>
16 mg/kg/day	< 9 yrs. — 24 mg/kg/day
or	
400 mg/day	9-12 yrs. — 20 mg/kg/day
(whichever is less)	12-16 yrs. — 18 mg/kg/day
	> 16 yrs. — 13 mg/kg/day



hibiting exercise-induced bronchospasm if given five minutes before exercise.

**Beclomethasone Dipropionate  
(Vanceril, Bechlovent):**

For the asthmatic uncontrolled on the above measures and/or requiring oral steroids, beclomethasone dipropionate may be indicated for children six years or older.<sup>12</sup> In the steroid-dependent patient, the addition of this inhaled topical corticosteroid can lower the required dosage of systemic oral corticosteroids.<sup>13</sup> The aerosol is maintained while the oral prednisone dosage is slowly reduced to a level where symptoms are controlled. Temporary increases in systemic oral steroids may be required, as deaths due to adrenal insufficiency have occurred during and after transfer from systemic corticosteroids to aerosol therapy.<sup>14</sup>

**Corticosteroids:**

When symptoms are not fully controlled on optimal doses of theophylline, sympathomimatics, or Cromolyn sodium, a short course (5-7 days) of a tapering dose of prednisone may be indicated. Prednisone is chosen because of its short length of action. The initial suppressive dose is usually 2 mg/kg per day (maximum 60 mg/24 hr.) split equally into four doses. After 48-72 hours, the dose is tapered by one pill (5 mg) per day and this maintenance dose can be given on a q.d. morning regimen. A severe asthmatic who has increased symptoms rapidly following cessation may require a prolonged every other day schedule. The lowest daily amount that maintains adequate control of wheezing should be determined by cautious reduction in dosage. That dose is doubled and given every other day with cautious tapering to the alternate day dose that maintains control of symptoms. Use of short-acting steroids in an alternate day schedule minimizes adrenal suppression. Because of prolonged effects, drugs such as dexamethasone, triamcinolone and betamethasone should not be used.

**Immunotherapy:**

A trial of immunotherapy is indicated when frequent asthma attacks are not controlled by allergen avoidance. Clinical hypersensitivity should be demonstrated to inhaled allergens by immediate reacting skin tests, bronchial provocation tests, or the serum RAST (radioallergosorbent test). Immunotherapy with ragweed, grass pollen, and house dust has been shown to be

efficacious and probable efficacy has been reported with tree pollens and mold extracts.<sup>15</sup>

Treatment with animal extract is not recommended because of various reactions at very low dosages. Almost all controlled studies of bacterial vaccines have shown no beneficial effects.

**Status Asthmaticus:**

Status asthmaticus is generally defined as the lack of improvement of severe asthma after appropriate management of several dosages of subcutaneous adrenergic agents or intravenous aminophylline. However, a recent study<sup>16</sup> showed that epinephrine and aminophylline was not superior to epinephrine alone. Status asthmaticus is a life-threatening occurrence and requires hospitalization and close observation.

A loading dose of intravenous aminophylline of 5 mg/kg should be given in 20-40 cc of fluid and infused over 20-30 minutes if no theophylline had been given in the previous 6-8 hours. Following this loading dose, a constant infusion may be started to keep the serum theophylline level between 10-20 ug/ml (0.6-1.1 mg/kg/hour). An alternative method is to give the aminophylline in bolus form (5 mg/kg diluted as above) every six hours. If theophylline has been recently given, the constant infusion may be started, omitting the initial bolus dose, depending on the serum level. Calculations should include the fact that aminophylline is composed of only 85% theophylline. Intravenous fluids (one-fourth normal saline) with potassium (20 meq/L) added after adequate urine output is established should be given at 1½ times maintenance (1,500 ml/m<sup>2</sup> q 24 hr.). Additional fluid requirements may be dictated on the basis on the clinical state and serum electrolytes.

After an initial arterial blood gas determination for a baseline reference, humidified oxygen should be given to keep the arterial pO<sub>2</sub> between 65-100 mmHg.

Inhalation of nebulized isoetharine (Bronkosol) or isoproterenol should be given every four hours if necessary. Nebulization is preferred, but intermittent positive pressure breathing may be used where expert respiratory technicians and close observations are available. A CXR prior to IPPB therapy is necessary to exclude a pre-existing pneumomediastinum or pneumothorax. The dose of the short-acting Isuprel (1)200 is 0.01 ml/kg up to 0.5 cc diluted in 5 cc normal saline.

Frequent use requires close observation and cardiac monitoring. Bronkosol (0.5 cc in 2 cc saline) has a longer effect and less cardiac-(B<sub>1</sub>) stimulation.

Prompt therapy with steroids is recommended for any asthmatic with a recent history of asthma requiring steroids for control or previously using inhaled beclomethasone to insure against adrenal insufficiency. Short-acting steroids such as Solumedrol (1-2 mg/kg/4-6 hours) should be employed. The suppressive dose is given every 4-6 hours for two-three days and the maintenance dose (2 mg/kg prednisone a day) may be given once a day and tapered by 5 mg each day over a 7-10 day period.

There is evidence that acidosis inhibits the action of beta adrenergic drugs.<sup>17</sup> Therefore, sodium bicarbonate (NaHCO<sub>3</sub> in mEq = base deficit  $\times$  0.3  $\times$  kg) may be given over 20-30 minutes to correct acidosis. Serial blood gases are indicated to monitor pH and pO<sub>2</sub> changes.

With impending respiratory failure, anesthesiology and support personnel should be notified. Occasionally the careful intravenous infusion of isoproterenol has been effective after all other methods have failed.<sup>18</sup> The initial dose is 0.1 ug/kg/min. and can be increased by that amount every 15 minutes until the pCO<sub>2</sub> begins to decrease, the heart rate exceeds 200/min. or persistent arrhythmias occur. This maneuver should not be attempted outside of an intensive care unit as continuous ECG monitoring is essential. After reaching the desired effect, the rate may be decreased by 0.1 ug/kg/min. every 1-2 hours as blood gases indicate.

Sedatives (especially morphine), tranquilizers and antihistamines are contraindicated for the patient in status asthmaticus.

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## EDITORIAL

# The Stroke Problem Revisited

Ray Jouett, M.D.\*

The reader of medical literature continues to be inundated with a tremendous amount of material concerning the stroke problem, much of which is related to the writer using statistics frequently to prove a point. The January issue of *The Journal of the Arkansas Medical Society* carried an article reviewing the extracranial vascular status.<sup>2</sup>

All the controversy adds nothing to the practicing physician who must treat the stroke and the impending stroke patient. Once the diagnosis of a transient ischemic attack has been made, should he treat the patient with alcohol, aspirin compounds, Coumadin, vasodilators, or a host of other agents that continue to be available? Cain, et al, state that surgical therapy for selected patients with carotid lesions may be indicated. They also quote that death as an end point should not be considered in the analysis of the patient regarding his forms of therapy.<sup>2</sup> No cognizance seems to be taken of the fact that one should try to maintain this individual in a functional condition until the time of his death, and if possible, try to prevent a disabling neurological catastrophe.

It has been well pointed out that three-fourths of the patients who suffer strokes have had a warning symptom in the form of the transient ischemic attack.<sup>7</sup> Also, thirty to thirty-five percent of untreated patients with transient ischemic attacks will develop frank strokes if followed three to five years or longer.<sup>1,3</sup>

The majority of these people are seen by the internist and the general practitioner, and their dilemma is how shall they proceed to try to prevent cerebral infarction with its devastating neurological sequelae? It is estimated that 350,000 people will suffer new strokes each year and that one-third will die within thirty days.<sup>6</sup> Those who

survive may be so neurologically impaired that the economic consequence to the family is beyond calculation.

Being attuned to the TIA is the beginning. The physician has only to listen to the complaints of transient numbness involving the face or extremities, transient weakness, episodes of blindness involving an eye, and/or aphasia; these being the most common complaints that will herald the diagnosis of a TIA.

Many adjuncts are available for evaluation. The nuclear brain scan, the computerized tomography of the brain, the Doppler scan of the carotids, and other noninvasive procedures remain within the physician's armamentarium. The ultimate examination is arteriography which carries a very low mortality and morbidity. Hass, et al, gave an overall mortality of 4,748 patients as 0.7%. An additional 0.5% sustained some type of permanent neurological deficit.<sup>4</sup>

One also needs to keep in mind that these people are on the average of 65 years or older, many of which are hypertensive, with diabetes, generalized arteriosclerotic problems and cardiac involvement. This mortality and morbidity of arteriography seems very mild when one considers the patient who has been neurologically devastated with a cerebrovascular accident. The practitioner needs also to keep in mind that the patient who is having repeated, frequent transient ischemic attacks needs to be started on intravenous Heparin and then be evaluated by the neurologist and neurological surgeon trained in vascular disease. For further evaluation, the neuroradiologist and anesthesiologist attuned to the vascular problem need to come into the picture if surgery is indicated.

The indications for surgery have previously been developed.<sup>5</sup> Several series also attest to the

\*750 Medical Towers Building, Little Rock, Arkansas 72205.

beneficial results of surgery for the prevention of stroke, as well as further TIA's, with a mortality of 0.8% and a morbidity of 2%.<sup>8</sup> This, of course, does not include the frank stroke patient which is another matter from the TIA. This figure will continue to fall as more and more people become skilled in the handling of this disorder. It is a general and recognized fact that surgery for the transient ischemic attack is beneficial from the standpoint of salvaging a patient from a serious neurological catastrophe.

The attitude of despair and confusion must be eschewed and proceed with investigation of the problem.

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## MEDICINE IN THE



### THE MONTH IN WASHINGTON

Soviet military adventuring, growing debate on the strength and readiness of our armed forces, and a presidential election to boot augur little attention to matters of medicine and health by the second session of the 96th Congress. But Capitol Hill soothsayers have not always been correct.

Deep within the President's State of the Union message he asks the Congress to approve his plan for national health insurance, stating it is "—the solution to the thirty years of congressional battles on national health insurance." The president also urged the Senate to rescue his hospital cost containment proposal, declaring the "longer we delay enacting cost containment, the more expensive our fight against hospital inflation will become."

Towards the end of the month the president spelled out in his budget message more details of

his administration's thinking with respect to the direction of the federal government's health policies.

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The Carter Administration has asked Congress to approve a \$61 billion budget for health programs, \$5 billion more than last year, largely because of the climb in the costs of Medicare and Medicaid.

The budget for fiscal 1981, the year starting Oct. 1, was marked by "overall fiscal restraint" due to the exigencies of inflation and international confrontations, but most health programs were ticketed for modest increases. The notable exception was aid for medical education, where the administration again proposed eliminating capitation aid and reducing funds for nurses' training.

A renewed plea was made for passage of Presi-



dent Carter's National Health Plan, but significantly, no start-up funds were set forth in the budget.

The administration also optimistically assumes that Congress will approve the Hospital Cost Containment Act (with a claimed result of annual "savings" of \$700 million) despite House defeat last year.

The Health, Education and Welfare Department asked for a total of \$222.9 billion, of which \$153 billion represented Social Security disbursements and \$51 billion was for Medicare and Medicaid outlays, up \$5 billion.

The budget contained \$326 million for support of health professions training programs, but states that by 1990 the supply will exceed the need, especially in the case of physicians. The termination of capitation grants to medical schools, a fiscal blow to the schools, would be accompanied by a \$77 million cut in support of nurse education.

The administration's new health manpower program hasn't been sent to Congress as yet, but the lawmakers probably won't have time to act this year and may pass a one-year extension of existing aid.

The budget provides a \$17.7 million increase, for a total of \$83.2 million, for expanded programs to train primary care physicians.

An additional 765 new and converted first-year family medicine residencies will be created nationally, bringing the total to 3,265. Also proposed are 147 new first-year residencies in other primary care specialties such as general internal medicine and general pediatrics.

Support for direct health services in community health centers and migrant health centers would total \$436 million, an increase of \$54 million.

The budget for the National Health Service Corps (NHSC) would total \$134 million, an increase of \$52 million. This would swell the present Corps to 1,700 so that 4,500 health care professionals would be serving. At the same time, the NHSC scholarship program, with an additional \$8 million, would be providing \$94 million in support of 6,700 students who later would join the Corps.

Funds for the maternal and child health grants to states and family planning programs were set at \$537 million, a \$27 million increase.

A total of \$565 million was earmarked for the Indian Health Service, a \$50 million increase.

The administration is requesting \$69 million — a \$10 million increase — to support 36 new Health Maintenance Organizations (HMOs) and to expand 47 existing HMO plans.

The president's budget request for all mental health activities in 1981 is \$671.3 million, including \$367,775,000 for services, \$162,964,000 for research, \$90,354,000 for training, \$12,117,000 for formula grants to states and \$38,113,000 for program administration.

The Medicare and Medicaid programs would be expanded. Legislation will be sought to eliminate the Medicare requirement that beneficiaries be hospitalized for three days before they are eligible for home health care services. Funds were proposed for a Medicare demonstration project to determine the costs and practicality of payment to home health aides for providing routine homemaker services, in conjunction with home health care.

The overall Medicare and Medicaid budget request for 1981 is \$53.2 billion, an increase of \$5.4 billion. The budget proposal includes \$403 million to fund the Child Health Assurance Program (CHAP) now under consideration in the Congress. CHAP would extend health care to an additional two million poor children not now eligible for Medicaid.

Expanded services to migrant children and to poor children in urban areas would result from a proposed \$90 million increase in the budget for the Head Start Program.

The budget targets \$859 million for the Public Health Service to promote healthful lifestyles, provide preventive health services and protect consumers and persons in the workplace, an increase of \$87 million.

The National Institutes of Health budget is \$3.6 billion, up \$139 million. Only minor additional funds were sought for the 11 institutes. The National Cancer Institute continues to get the most, \$1 billion, with Heart, Lung and Blood next at \$548 million.

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The administration plans to amend its National Health Plan to eliminate the requirement that reimbursable chiropractic services can be provided only on referral from physicians.

Stuart Eizenstat, Domestic Affairs Aide to President Carter, told the American Chiropractic Association and the International Chiropractors

Association in a letter that "the initial specifications for the Administration's legislation were altered to provide a definite role for chiropractors" following talks with chiropractic officials.

HEW will soon be sending Congress a technical amendment to provide chiropractors a greater role in the plan, according to Eizenstat.

The Medicare-Medicaid amendments being considered in the House and Senate also relax requirements for chiropractic reimbursement. The House measure changes present requirements by reimbursing chiropractors for the costs of X-rays to diagnose subluxation of the spine. Reimbursement also is allowed if subluxation is demonstrated through clinical finding without X-ray. The Senate bill follows the latter provision, simply dropping the requirement for X-ray to demonstrate subluxation.

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American physicians have chalked up a "massive accomplishment" in keeping medical fees below the Consumer Price Index (CPI) in a time of galloping inflation, according to James H. Sammons, M.D., executive vice president of the AMA.

Physicians "have clearly demonstrated their intention to make the Voluntary Effort (VE) work," Dr. Sammons said. "We are going to continue to extend our best efforts," he pledged.

Commenting on the impact of the VE since its 1977 inception, Dr. Sammons told a Washington, D. C., news conference the results mark "a rare occasion in history, when a professional group has voluntarily restrained the rate of increase in its fees. They now stand three percentage points below the CPI." The achievement is all the more noteworthy in view of the fact that the buying power of physicians has dropped 10 percent in the past eight years, he said.

Figures released at the briefing showed that the nation's hospitals have saved consumers more than \$2.88 billion since the VE was established and that during most of this period the rate of increase in physicians' fees has consistently been several points below the all-items index of the CPI. Price increases throughout the health care field have been more moderate than the overall CPI. The latest statistics show that the medical index was lower than the overall CPI for the 13th month in a row.

Paul Earle, VE executive director, said the VE goals include a continued campaign to restrain

the increase in health care costs to attain a closer relationship between total health care expenditures growth and growth in the total gross national product.

The national increase in total inpatient community hospital expenditures in 1980 should decline by 1.5 percentage points from 1979, contingent on no increase in the general economy-wide inflation rate in 1980 over 1979, he said.

The total number of hospital beds in the nation should be held at the level as of December 31, 1978, adjusted for any new beds added due to certificate-of-need approvals prior to that date.

The latest data show hospital beds increasing at the slowest rate (0.7 percent for the first nine months of 1979) since 1963, the first year for which data are available.

Physicians, during the first half of 1980, were asked to continue to voluntarily restrain fee increases to a level that maintains the 1979 relationship between the all-items index and the physicians service index of the CPI. This target will be reassessed in mid-1980.

The VE founding members are the AMA, the American Hospital Association, and the Federation of American Hospitals. In addition to these three organizations, the VE partners include the Blue Cross/Blue Shield Associations, the Health Industry Manufacturers Association, the Health Insurance Association of America, the National Association of Counties, representatives of business, and Virginia Knauer & Associates, a consumer affairs consulting firm.

\* \* \* \*

Some of the toughest and most far-reaching social and philosophical questions facing medicine are on the agenda of the new Presidential Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research.

The 11-member commission has conducted its first meeting with an imposing list of initial assignments:

- the requirements for informed consent in research and medical practice,
- the definition of death,
- programs for genetic testing, counseling and education,
- differences in the availability of health services by income or place of residence, and
- the confidentiality and privacy of medical records.



Commission Chairman Morris Abram, a New York attorney, said "a thoughtful consideration of these enumerated subjects reveals an over-arching concern derived from enormous strides in the natural sciences and the tensions which have resulted.

"The once simple fact of death has been rendered murky by machines which can prolong ordinary vital functions," he noted.

"Informed consent becomes complicated when advanced therapies are difficult to explain and their results far from predictable.

"Privacy of medical care, formerly confidently assumed, is now sorely tested by the proliferation of technicians, specialists and the inevitable records and other accoutrements of modern medicine and life," said Abram.

He asked if there is any way to wisely and fairly distribute medical care not only on the basis of income and geography, but also with respect to age. "In other words, should the society concentrate its always limited medical resources to barely sustain life in the aged infirm as opposed to better care for the young?

"The hard questions are endless — but they are not academic and the answers affect the quality of research, the quality of life, the health of the public — and the pocketbook," said Abram.

Physician members of the Commission are:

Mario Garcia-Palmieri, M.D., Professor and Head of the Dept. of Medicine of the University of Puerto Rico; Donald Medearis, M.D., Chief of Children's Service at Massachusetts General Hospital; Charles Wilder, Professor of Pediatrics at Harvard University; Arno G. Motulsky, M.D., Professor of Medicine and Genetics and Director of the Center for Inherited Diseases at the University of Washington; Fritz O. Redlich, M.D., Professor of Psychiatry at the University of California at Los Angeles; and Charles J. Walker, a Nashville, Tenn., physician in private medical practice.

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The Justice Department has reported that 100 physicians were prosecuted for selling drugs illegally between 1972 and 1977. The drug involved was a stimulant in more than one-half the cases. Only one in every five cases involved a narcotic. Justice said that in nearly all of the cases there was no general physical examination of the "patient" before distribution of the drug.

A majority of the physicians were found guilty and received prison sentences.

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## RESOLUTIONS



### DR. GEORGE BYRON TALBOT

WHEREAS, the members of the Jefferson County Medical Society are deeply saddened by the recent death of their esteemed colleague, George B. Talbot, M.D.; and

WHEREAS, Dr. Talbot has been held in great respect by his fellow physicians for his devotion to the profession; and

WHEREAS, his devotion to the betterment of the health of his countless patients was recorded by their reverence of him;

BE IT THEREFORE RESOLVED:

THAT, this resolution be adopted and made a part of the permanent record of this Society; and

THAT, a copy of the resolution be sent to Dr. Talbot's family as a token of our sincere appreciation of his life and leadership, and

THAT, a copy be sent to the Journal of the Arkansas Medical Society for publication.

Signed:

Clarence M. Rittelmeyer, Chairman  
Jefferson County Medical Society



### ANSWER—Electrocardiogram of the Month

DISCUSSION: The ECG shows a sinus rhythm and a normal axis, PR interval, and QRS duration. Q-waves in I, AVL, and V1-V3 along with ST elevation in I, AVL, and V2-V6 and ST depression in II, III, and AVF are strongly suggestive of recent anterior and lateral infarction. There is no evidence of deranged conduction but the patient's history is at least suggestive of rhythm disturbance. Many authorities would recommend PA catheterization if a low output state is suspected and there is growing evidence to justify the use of prophylactic lidocaine in many patients with acute infarction. The usual indications for pacing are not present. Based upon the scant information given, D. and E. are reasonable options.

# keeping up

## Category 1 Continuing Medical Education Programs Available in Arkansas

### **MID-CENTRAL STATES ORTHOPAEDIC ANNUAL MEETING**

Presented by Alfred B. Hathcock, M.D., *May 1st, 2nd, and 3rd*, Indian Rock Resort, Fairfield Bay. Ten hours Category I credit. Registration fee undetermined at this time. Sponsored by UAMS.

### **ARKANSAS ACADEMY OF PATHOLOGY**

Presented by Glen F. Baker, M.D., *May 3-4, 9:00 a.m. to 12:00 noon each day*, Red Apple Inn, Heber Springs, Arkansas. Five hours Category I credit. Fee not determined at this time. Sponsored by UAMS.

### **LARYNGETOMEE REHABILITATION**

Presented by Kathleen B. Wesson, M.A., *May 8-9, 8:00 a.m. to 4:30 p.m.*, UAMS Campus, Education II Building, Room G137. Twelve hours Category I credit. Registration fee \$15.00. Sponsored by UAMS.

### **ENDER NAILING**

Presented by Carl L. Nelson, M.D., *May 24th, 8:00 a.m. to 12:30 p.m.*, UAMS Campus, Educa-

tion II Building, Room G141. Three and one-half hours Category I credit. Registration fee not determined at this time. Sponsored by UAMS.

### **CHEMOTHERAPY AND IMMUNOTHERAPY FOR HEAD AND NECK CANCER**

Presented by James Suen, M.D., *June 5, 8:00 a.m. to 5:00 p.m.; June 6, 8:00 a.m. to 12:00 noon*, Camelot Inn, Little Rock. Twelve hours Category I credit. Fee not determined at this time. Sponsored by UAMS.

### **TEENAGE PREGNANCY IN ARKANSAS**

Presented by Robert Arrington, M.D., Arkansas Department of Health, *June 6, 9:00 a.m. to 7:00 p.m., and June 7, 9:00 a.m. to 4:00 p.m.*, Indian Rock Resort, Fairfield Bay, Arkansas. Eight hours Category I credit. Sponsored by UAMS.

### **FAMILY PRACTICE INTENSIVE REVIEW**

Presented by Ben N. Saltzman, M.D., *June 27-29*, time not determined as yet, UAMS Campus, Education II Building, Room G141 A&B. Hours of credit and fee not determined at this time.

### **RECURRING EDUCATION PROGRAMS**

Unless otherwise indicated, programs are for one to one and one-half hours Category I credit.

#### **FAYETTEVILLE — AHEC-NW**

*Medicine — Family Practice Teaching Conference*, 7:30 a.m. each Saturday, Washington Regional Medical Center.

#### **FAYETTEVILLE — VA MEDICAL CENTER**

*Radiology Conference*, May 6th and 21st and June 3rd and 18th, 3:00 p.m., Conference Room.

*Pathology Conference*, May 20, 3:00 p.m., and June 10th, 1:30 p.m., Conference Room.

*Mortality Conference*, May 8th and June 12th, 3:00 p.m., Conference Room.

*Cardiology Conference*, May (check for date and time)

*Renal Conference*, June (check for date and time)

#### **FORT SMITH — AHEC**

*Tumor Conference*, every Tuesday, 12:00 noon, Fourth Floor Conference Room, Sparks Regional Medical Center.

#### **LITTLE ROCK — BAPTIST MEDICAL CENTER**

*Pulmonary Care Conference*, each Tuesday, 12:00 noon to 1:00 p.m., Dining Room #4.

*Central Arkansas Primary Care Conference*, second Tuesday, 7:00 p.m. to 9:00 p.m., Auditorium. Two hours Category I credit.

*Cardiopulmonary Resuscitation Course*, second Wednesday, 6:00 p.m. to 12:00, Human Resource Development Area. Six hours Category I credit.

*Emergency Room Medicine Conference*, second and fourth Wednesday, 12:00 noon to 1:00 p.m., Conference Room #1.

*Morbidity and Mortality Conference*, first Thursday, 8:00 a.m. to 9:00 a.m., Conference Room #1.

*Surgery Conference*, each Thursday except first Thursday, 8:00 a.m. to 9:00 a.m., Conference Room #1.

#### **LITTLE ROCK — ST. VINCENT INFIRMARY**

*Interhospital GI Problems Conference*, first Monday, 6:00 p.m. to 7:30 p.m., Room E155, Education Wing.

As organizations accredited for continuing medical education by the Liaison Committee on Continuing Medical Education, the organizations named certify that these continuing medical education activities meet the criteria for the credit hours specified in Category I of the Physician's Recognition Award of the American Medical Association.



*Peripheral Vascular Disease Conference*, second Monday, 6:00 p.m. to 7:00 p.m., Room E155, Education Wing.  
*Pediatric Conference*, first and third Monday, 12:30 p.m. to 1:30 p.m., Room E159, Education Wing.  
*Interhospital Urology Grand Rounds*, May 27th and June 3rd, 5:30 p.m. to 6:30 p.m., Room E159, Education Wing.  
*Neuropathy Conference*, third Tuesday, 5:00 p.m. to 6:00 p.m., Room S1169, Laboratory.  
*Pulmonary Conference*, first and third Thursday, 12:00 noon to 1:00 p.m., Room E159, Education Wing.

**LITTLE ROCK — UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES**

*Internal Medicine Grand Rounds*, each Tuesday, 8:00 a.m. to 9:00 a.m., Education I Auditorium.



## PERSONAL AND NEWS ITEMS

### **Dr. Michael C. Young**

Dr. Young of Prescott is a candidate for the position of Nevada County Coroner. He is now serving as Physician Advisor to the Nevada County Chapter of the American Cancer Society, secretary of the Nevada County Medical Society, and Chief of Staff of the Nevada County Hospital.

### **Little Rock Physicians Honored**

Drs. C. Frank Dodson, Jr., Jay M. Lipke and Edward R. Weber were inducted as Fellows of the American Academy of Orthopaedic Surgeons at the Academy's annual meeting in Atlanta.

### **Dr. Saltzman Speaks**

Dr. Ben Saltzman of Little Rock recently spoke at a noon meeting of the Batesville Rotary Club.

### **Dr. Baldridge Named Medical Director**

Dr. John A. Baldridge of Jonesboro is the new medical director of Hospice of Northeast Arkansas, Inc. In this capacity, he will have responsibility for medical aspects of health care and be responsible for team support and education.

### **Dr. Citty Speaks**

Dr. Jim Citty of Searcy spoke during a Christian Awareness Seminar at Harding University. The topic of Dr. Citty's presentation was "Infanticide and Euthanasia."

### **Physician Appointed**

Dr. William J. Weaver was recently appointed president of the Eudora Bank Board of Directors.

### **Rotary Speaker**

Dr. Ben N. Saltzman was guest speaker at the Booneville Rotarian Sandwich Banquet on February 21.

### **Officers of the White River Medical Center Elected**

Newly elected officers of the White River Medical Center are: Dr. Bob Smith, Chief of Staff; Dr. Paul Baxley, Vice Chief of Staff; and Dr. Lloyd Bess, Secretary-Treasurer. Immediate Past Chief of Staff is Dr. James Stalker.

### **Physician Named Diplomate**

Dr. Oliver C. Raney of Pine Bluff has been named a diplomate of the American Board of Family Practice.

### **Dr. Holt Joins Dr. Paul Gray**

Dr. Paul Gray has announced that Dr. L. J. Holt has joined him in his practice at 477 East Main Street, Batesville.

### **Dr. Durham Speaks**

Dr. J. W. Durham of Jacksonville was guest speaker at a recent meeting of the Cabot Lions Club. Dr. Durham spoke on health care in the Cabot area and of plans to enlarge the Rebsamen Memorial Hospital in Jacksonville.

### **Rotary Club Speaker**

Dr. Ben Saltzman of Little Rock spoke at a recent meeting of the Pine Bluff Rotary Club. Dr. Saltzman is chairman of a new Rotary International program, the Committee of 3-H (health, hunger and humanity).

### **Physician Honored**

Dr. David A. Miles of Little Rock became the first Arkansas physician to be elected to active membership in the American Association of Electromyography and Electrodiagnosis at the recent annual meeting of the organization in New Orleans.



## NEW MEMBERS

### **DR. ROBERT L. BAKER**

Baxter County Medical Society has added Dr. Robert L. Baker to its membership roll. Dr. Baker, a native of Oak, Nebraska, received his B.S. degree at Louisiana Polytechnic Institute in 1945. He received his M.D. degree from the University of Arkansas College of Medicine in 1949.

He served his internship at the Tripler General Hospital in Honolulu, Hawaii, and his residency in Obstetrics-Gynecology at the Naval Hospital in Oakland, California.

Dr. Baker served in the Navy from 1949 until 1979. During his tour of duty, he served with the Obstetrical-Gynecological Staff at Naval Hospitals in Guam; Great Lakes, Illinois; and Camp Lejeune, North Carolina. He served in the capacity of Chairman at the Obstetrical-Gynecological Naval Hospitals in Camp Lejeune, North Carolina; Oakland, California; Pensacola, Florida; and Portsmouth, Virginia. While in Virginia, he was a Clinical Professor of Obstetrics-Gynecology with the Virginia Commonwealth University. Dr. Baker was Commanding Officer of the Naval Regional Medical Centers in Philadelphia, Pennsylvania; and Pensacola, Florida.

He is a Board Certified Obstetrician-Gynecologist and practices at #10 Medical Plaza, Mountain Home.

The Jefferson County Medical Society has added two new members to its roll:

### **DR. DON M. LUM**

Dr. Lum, a native of Blytheville, received his B.S. from the University of Arkansas in 1968. He received his medical degree in 1972 from the University of Arkansas College of Medicine.

Dr. Lum served with the United States Army from 1972 until 1979. During his tour, he served a rotating internship and a residency in Dermatology at the Brooke Army Medical Center at Fort Sam Houston, Texas. His tour of duty also

included Fort Benning, Georgia, and Fort Leonard Wood, Missouri.

Dr. Lum is Board Certified in Dermatology.

He is a Fellow of the American Academy of Dermatology and a member of the Dermatology Foundation and the International Society of Tropical Dermatology.

Dr. Lum practices at 1606 West 42nd, Pine Bluff. He is an Assistant Clinical Professor with the Department of Dermatology at the University of Arkansas College of Medicine.

### **DR. PAUL L. SMITH**

Dr. Smith is a native of Ogden, Arkansas. He attended Arkansas AM&N, the University of Arkansas at Pine Bluff and Purdue University in West Lafayette, Indiana. In 1966, he received a Ph.D. degree.

From 1966 until 1971, he taught at the University of Arkansas at Pine Bluff. He then returned to the University of Arkansas College of Medicine where he received his medical degree in 1975 and served his internship and residency.

Dr. Smith has served as a staff physician with the Arkansas Children's Colony in Alexander.

He practices Pediatrics at 3104 Catalpa, Suite 10, in Pine Bluff.

The Logan County Medical Society has added three to its membership roll:

### **DR. YOUNIS A. ASAD**

Dr. Asad is a native of Jerusalem, Palestine. He attended Boston University and Suffolk University in Massachusetts to attain his pre-medical education. His M.D. degree was received from the Medizinische Fakultät Universität Heidelberg, Baden-Württemberg, West Germany, in 1968. He served his residency in General Practice and Pediatrics at the Variety Children's Hospital in Miami, Florida, and at the Toledo Medical College, Ohio.

Before moving to Booneville, he practiced in Toledo, Ohio, and Santa Barbara, California. He is in Pediatrics and Family Practice at 114 West 4th, Booneville.

### **DR. PIERRE BOISSINOT**

Dr. Boissinot, a native of Quebec City, Canada, received his Bachelor of Arts and Medical Degree from the Laval University Faculty of Medicine, Quebec. He did his internship at Christ-Roi Hospital, Quebec City, Canada.

He served in the Canadian Forces for four years and practiced in Val Belair, Quebec.

Dr. Boissinot is in General Practice at 1812 East Walnut in Paris.



## NEW MEMBERS

### DR. GUY ULRICH

Dr. Ulrich is a native of Montreal. He was graduated from the University of Montreal with a Bachelor of Arts degree in 1959. His M.D. degree was received from the University of Sherbrooke, Faculty of Medicine at Sherbrooke, Quebec, in July 1973. His internship was at the University of Sherbrooke Medical Center.

After his internship, he served with the Canadian Forces Europe Medical Center in Lahr, Germany, for three years. He practiced in Valcartier-Quebec, Canada, for two years.

Dr. Ulrich is in General Practice at 1812 East Walnut, Paris 72855.

### DR. DENNIS BERNER

Dr. Dennis Berner has joined the Pope County Medical Society. Dr. Berner, a native of Fayetteville, graduated from the University of Arkansas at Fayetteville. He received his medical degree from the University of Arkansas College of Medicine in 1974. He served his internship at University Hospital in Little Rock.

From 1975 to 1977, Dr. Berner served with the United States Naval Reserve. He then returned to the University Hospital to serve his residency.

Dr. Berner practices Internal Medicine at Millard-Henry Clinic, 3105 West Main Place, in Russellville. He is an associate member of the American College of Physicians.

The Pulaski County Medical Society has added fourteen new members to its roll:

### DR. ROBERT W. ARRINGTON

Dr. Arrington is a native of Fayetteville. He received his pre-med education at the University of Arkansas in Fayetteville and his medical degree from the University of Arkansas College of Medicine. His internship was at the University Hospital.

From 1968 to 1970, he served a residency in Pediatrics at the University of Arkansas College of Medicine which was followed by a two-year residency in Neonatology at the same institution.

He is an Associate Professor with the Department of Pediatrics and Director of the Division of Neonatology at the University of Arkansas College of Medicine.

He is Board Certified in Pediatrics and Neonatal-Perinatal Medicine.

Dr. Arrington practices Neonatology at 1721 Maryland, Little Rock, and is a Neonatology Con-

sultant with St. Vincent Infirmary, Baptist Medical Center, Doctors' Hospital and the Arkansas Children's Hospital.

### DR. DENNIS R. BURROW

Dr. Burrow, a native of Little Rock, was graduated from the University of Arkansas at Fayetteville in 1974 with a Bachelor of Arts in Chemistry. He received his medical degree from the University of Arkansas College of Medicine in 1978. His internship was served at the Baptist Medical Center in Little Rock.

Dr. Burrow practices at 550 Edgewood, Mammelle New Town.

### DR. ELIZABETH S. GLOSTER

Dr. Gloster was born in New York City. She received her Bachelor of Arts at Vassar College in Poughkeepsie, New York, and her medical degree at the University of Colorado School of Medicine, Denver, in 1967. Her internship was at Baylor University Hospital in Houston, Texas.

Dr. Gloster served a residency in Pathology at Albert Einstein Medical School, Bronx, New York, from 1968 to 1971; a Hematology residency at Montefiore Hospital, Bronx, New York, from 1971 to 1973; and a Blood Banking residency at the New York Blood Center in Manhattan from 1975 to 1976. She is board certified.

Dr. Gloster is Director of the ARC Arkansas Regional Blood Services at 401 South Monroe Street, Little Rock, and a Clinical Assistant Professor in Pathology at the University of Arkansas College of Medicine.

### DR. RONALD R. HALL

A native of Fort Worth, Texas, Dr. Hall received his Bachelor of Science degree from Abilene Christian College in 1967 and his medical degree from the University of Texas Medical Branch, Galveston, Texas, in 1971.

His internship was at the David Grant Medical Center at Travis Air Force Base in California. While at the David Grant Medical Center, he served a residency in Internal Medicine from 1971 to 1974 and had a Fellowship in Cardiology from 1974 to 1976.

Dr. Hall is Board Certified in Internal Medicine and Cardiology. He is a member of the American College of Cardiology and the American Heart Association.

His office is in Suite 360 of the Doctors Park Building, Little Rock.

## NEW MEMBERS

### DR. JOHN C. JONES

Dr. Jones is a native of Little Rock. He was graduated from Vanderbilt University in Nashville, Tennessee, in 1965 with a Bachelor of Arts degree and received his medical degree from the University of Arkansas College of Medicine in 1971.

He served his internship at John Hopkins Hospital in Baltimore, Maryland. His residency in General Surgery was at the University of California at Los Angeles from 1973 to 1977. He was Board Certified in General Surgery in July 1977.

Dr. Jones practices at 500 South University Avenue in Little Rock.

### DR. DENNIS D. KUMPURIS

Dr. Kumpuris, a native of Little Rock, received his pre-med education at Washington and Lee University in Lexington, Virginia. In 1974, he received his medical degree from Emory University School of Medicine in Atlanta, Georgia. His internship and Internal Medicine residency were at the same institution.

He is Board Certified in Internal Medicine.

Dr. Kumpuris practices Gastroenterology at 501 North University, Little Rock.

### DR. CARL N. MCKINNEY

A native of El Dorado and graduate of Hendrix College in Conway, Dr. Carl McKinney received his medical degree from the University of Arkansas College of Medicine in 1971.

Dr. McKinney served his internship at the University of Arkansas Medical Center and a residency in Pathology at the same institution. He taught for one year in the Department of Pathology at the University of Arkansas College of Medicine.

From 1975 to 1979, he practiced in Texarkana, Texas. He now practices in the Doctors Building in Little Rock.

Dr. McKinney is Board Certified in Pathology.

### DR. EDWARD R. NORTH

A native of Kansas City, Missouri, Dr. Edward North received a B.A. degree from the University of Kansas, Lawrence, in 1967 and his M.D. degree from the University of Kansas School of Medicine, Kansas City, Kansas, in 1971.

Dr. North's internship was at the University of Oregon Medical School Hospital and Clinics, Portland. He served an Orthopaedic Surgery resi-

dency at the University of Arkansas College of Medicine and a Hand Surgery residency at the Roosevelt Hospital in New York City.

Dr. North is Board Certified in Orthopaedic Surgery.

He is on the faculty of the University of Arkansas College of Medicine and practices at 4301 West Markham.

### DR. GEORGE A. NORTON

Dr. Norton, a native of St. Louis, Missouri, was graduated from Hendrix College in Conway in 1970 with a B.A. in Biology. His medical degree was received from the University of Arkansas College of Medicine in 1974.

Dr. Norton served an internship at the St. Louis University Group Hospitals and did a residency in Diagnostic Radiology at the Kansas University Medical Center in Kansas City.

He is a Board Certified Radiologist.

Dr. Norton practices with Radiology Associates, P.A., at 500 South University, Little Rock.

### DR. TERRENCE A. ODDSON

A native of Dallas, Texas, Dr. Terrence Oddson received his pre-med education from Texas A&M University at College Station, Texas. In 1969, he received his medical degree from the University of Texas Southwestern Medical School in Dallas.

Dr. Oddson served his internship at the Veterans Administration Hospital in Dallas. His residency in Diagnostic Radiology was at the Duke University Affiliated Hospitals in Durham, North Carolina.

He is Board Certified in Radiology.

Dr. Oddson is a member of the American College of Radiologists and the Radiological Society of North America.

He practices at 500 South University in Little Rock.

### DR. FERNANDO PADILLA

Dr. Padilla is a native of Rio Piedras, Puerto Rico. He attended the University of Puerto Rico, San Juan, from 1953 to 1957 for his pre-medical education. His medical degree was received in 1961 from the University of Puerto Rico School of Medicine in San Juan.

He served an internship at the St. Elizabeth Hospital Medical Center in Youngstown, Ohio. He did a residency in Internal Medicine from



## NEW MEMBERS

1962 to 1965 at the St. Elizabeth Hospital Medical Center, and residencies in Hematology-Oncology at the University of Pittsburgh, Pennsylvania, from 1965 to 1967, and at the Ohio State University in Columbus from 1967 to 1968.

Dr. Padilla was an Associate Professor of Medicine at the University of Arkansas College of Medicine from 1968 to 1979. He now practices at 110 Parkview Medical Building, 1 St. Vincent Circle, in Little Rock.

### DR. WILLIAM E. TUCKER

Dr. Tucker is a native of Jonesboro. He attended Arkansas State University for his pre-med education and received his medical degree from the University of Arkansas College of Medicine in 1975. His internship and residency in General Surgery were at the same institution.

He practices in Suite 990 of the Medical Towers Building, Little Rock, and is an Assistant Professor of Surgery at the University of Arkansas College of Medicine.

### DR. ROBERT G. VOGEL

A native of Sandusky, Ohio, Dr. Robert Vogel attended Adelbert College and the Western Reserve University in Cleveland, Ohio. He received his medical degree from the Baylor College of Medicine in Houston, Texas.

Dr. Vogel served a General Surgery residency at the Hermann Hospital, Houston, and the University of Texas at Houston and a Plastic Surgery residency at Baylor College of Medicine.

Dr. Vogel practices at the University Towers in Little Rock.

### DR. HARRY P. WARD

Dr. Harry P. Ward is a native of Pueblo, Colorado. He was graduated from the Princeton University in 1955, and received his M.D. degree from the University of Colorado School of Medicine in Denver in 1959. In 1963, he was graduated from the University of Minnesota, Minneapolis, with a M.S.

His internship was at Bellevue Hospital, New York City, from 1959 to 1960. He was in residency training in Medicine at the Mayo Clinic in Rochester, Minnesota, from 1960 to 1962 and was a Fellow in Hematology at the same institution from 1962 to 1963. Dr. Ward was Chief Medical Resident with the University of Colorado School of Medicine, Denver, 1963-1964.

He is a member of American College of Phy-

sicians, American Society for Nuclear Medicine, American Federation for Clinical Research, American Society of Hematology, Western and Central Society for Clinic Research, and Federation of American Society for Experimental Biology.

Dr. Ward is a Diplomate of the American Board of Internal Medicine.

Dr. Ward is Chancellor of the University of Arkansas Medical Sciences Campus.

### DR. A. G. PELLIZZETTI

The Union County Medical Society has added Dr. A. G. Pellizzetti to its membership roll. Dr. Pellizzetti is a native of Brazil. He received his pre-med education in Brazil and his medical degree from the Faculty of Medicine of University of Parana, Curitiba, Parana, Brazil, in 1961.

He served his internship at the Stamford Hospital, Stamford, Connecticut. His residency in Radiology was at the Labey Clinic of Boston, Massachusetts.

Dr. Pellizzetti practiced at St. Mary's Hospital in Waterbury, Connecticut, and with the Life Sciences Division of Whittaker Corporation in California. He was an instructor with Boston University.

He is a Board Certified Radiologist practicing at the Union Medical Center, 700 West Grove, El Dorado.

### DR. CYNTHIA L. NETHERTON

Dr. Netherton, a native of Baton Rouge, Louisiana, has become a member of the Van Buren County Medical Society. After attending John Brown University for three years, she received her M.D. degree from the University of Arkansas College of Medicine. She served a flexible internship with the United States Public Health Service in New Orleans.

In 1979, she began General Family Practice at the Medical Services Clinic in Clinton. She is currently in active duty with the Public Health Service.

The Jefferson County Medical Society has added three courtesy members to its roll:

### DR. STEVEN P. BONNER

Dr. Bonner is a native of Altadena, California. He is a graduate of the University of Arkansas College of Medicine and a Family Practice resident with the AHEC program in Pine Bluff.

**DR. MICHAEL H. BROSS**

Dr. Bross, a native of Norman, Oklahoma, is a resident in the Family Practice program at Pine Bluff. He graduated from the University of Oklahoma School of Medicine.

**DR. ROGER T. TILLEY**

Dr. Tilley, also a Family Practice resident in the AHEC program in Pine Bluff, graduated from the University of Arkansas College of Medicine. He is a native of Arkadelphia.



**THINGS TO COME**



**MAY 1980**

**May 9-11**

*Radiation and Public Health: The Myth of Radiation — An Attempt at Clarification.* The American College of Nuclear Medicine Ninth Annual Scientific Meeting. Hyatt Regency Hotel, Montreal, Canada.

For details contact: J. R. Maxfield, M.D., ACNM Secretary, Post Office Box 19412, Medical Center Station, Dallas, Texas 75219.

**May 15-18**

*Ages, Wages & Ethics: An Agenda for the 80's* will be the theme of the annual meeting of the American Society of Internal Medicine. The meeting will be held at the Hyatt Regency Hotel in Washington, D. C.

For further information, contact the American Society of Internal Medicine, 2550 M Street, NW, Suite 620, Washington, D. C.

**JUNE 1980**

**June 6-7**

*Update in Infectious Disease — 1980.* Fourteenth Annual Kenneth C. Haltalin Pediatrics Seminar sponsored by Southwestern Medical School, The University of Texas Health Science Center at Dallas. Nine credit hours, Category I, Physician's Recognition Award of the American Medical Association. The Regent Hotel, Dallas, Texas. For further information, contact Division of Continuing Education, the University of Texas Health Science Center at Dallas, 5323 Harry Hines Boulevard, Dallas 75235.

**NOVEMBER 1980**

**November 2-7**

The American Academy of Ophthalmology has rescheduled its annual meeting for Chicago's McCormick Place.

For further information, contact the American Academy of Ophthalmology, 1833 Fillmore Street, Post Office Box 7424, San Francisco, California 94120, or phone (415) 921-4700.



**O B I T U A R Y**

**DR. JULIAN LEE FOSTER**

Dr. Julian Foster died March 6, 1980. He was born January 14, 1917. He is survived by his wife, Mrs. Johanna Swaim Foster, and one son.

At the time of his death, Dr. Foster was president of the Pulaski County Medical Society.

A native of Pocahontas, he graduated from the University of Arkansas College of Medicine in 1950 and served his internship at the Missouri Methodist Hospital in St. Joseph and entered private practice in Little Rock in 1951. He was an Assistant Clinical Professor of Family Practice at the University of Arkansas College of Medicine and on the staffs of Baptist Medical Center and St. Vincent Infirmary.

Dr. Foster was a charter member of the Arkansas Academy of Family Practice, a diplomate of the American Academy of Family Physicians and a past president of the Arkansas Cancer Society. He had served with the United States Navy during World War II. Dr. Foster was a member of



the Arkansas Orchid Society. He was a past vestryman at Trinity Episcopal Cathedral.

**DR. H. RAY FULMER**

Dr. H. Ray Fulmer died on March 3, 1980. He was born March 28, 1913.

A native of Little Rock, he was graduated from the Arkansas School of Medicine in 1937. He interned at St. Louis County Hospital and Koch Hospital in St. Louis. His residency in Dermatology was at the Northwestern University School of Medicine in Chicago. He had retired from his practice on February 29, 1980.

Dr. Fulmer was a former Associate Professor of Dermatology at the University of Arkansas College of Medicine. He had served on the staffs of the St. Vincent Infirmary and the Baptist Medical Center and on the consultant staffs of the Veterans Administration Medical Center and the Missouri Pacific Hospital.

He was a member of the State War Memorial Stadium Commission. He had also served on the boards of the Pleasant Valley Country Club and the Junior Deputy baseball program.

Dr. Fulmer is survived by his wife, Mrs. Gwen Dulaney Fulmer, and two sons.

**DR. H. B. WHITE**

Dr. H. B. White of Morrilton died February 24, 1980; he was born August 29, 1927, in Lake Charles, Louisiana. He is survived by his wife, Mrs. Betty McGinnis White; his son, Dr. Robert B. White of Paragould; two other sons, a daughter and a foster son.

Dr. White practiced medicine for nineteen years in Morrilton after his graduation from the University of Arkansas College of Medicine in 1960 and an internship at the Arkansas Baptist Hospital.

He was a member and past president of the Board of Directors of the Morrilton Public Schools and a member of the Board of Commissioners for the Morrilton Housing Authority. Dr. White was a former chief of staff of the Conway County Hospital and a member of the hospital board and a member of the Alpha Omega Honorary Medical Fraternity.



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May, 1980

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SCIENTIFIC ARTICLES

Leukemia Remission — Effect on  
Psychic Adjustment ..... 491  
*F. O. Henker, M.D., A. Haut, M.D.,  
and D. A. Brown, Ph.D.*

Congenital Inguinal Hernia —  
Management of the  
Contralateral Side ..... 494  
*E. S. Golladay, M.D.,  
and John Lambert, M.D.*

FEATURES

Office Orthopaedics:  
“The Nature of the Problem —  
and State of the Art” ..... 497  
*Kenneth G. Jones, M.D.*

ECG of the Month ..... 501  
*John W. Watson, M.D.*

Pediatric Review: “Monitoring  
Antibiotic Resistance  
in Arkansas” ..... 502  
*Richard F. Jacobs, M.D.,  
Kathy D. Eisenach, M.S.,  
and Terry Yamauchi, M.D.*

Editorial: “Gastro-Intestinal  
Hormones” ..... 505  
*Alfred Kahn, Jr., M.D.*

From Other Years ..... 506

Arkansas Medical Journal  
News Briefs ..... 507

Medicine in the News ..... 508

Keeping Up ..... 511

Personal and News Items ..... 512

New Members ..... 513

Resolutions ..... 517

Obituary ..... 518

Index ..... 519

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## Leukemia Remission — Effect on Psychic Adjustment

Fred O. Henker, M.D., Arthur Haut, M.D., and Douglas A. Brown, Ph.D.\*

Observations of inadequate adjustment among leukemia patients in remission prompted this study of such individuals for psychological and situational factors influencing their maladaptation.

The prognosis for adult patients with acute leukemia has changed radically in the last decade. Before the advent of chemotherapy with cytarabine and the anthracycline drugs, daunorubicin and doxorubicin, complete remission was rarely achieved in acute leukemia. Half of the patients succumbed to the disease in two and one half to five months. The diagnosis was looked upon as a fate worse than a death sentence because there was no hope of reprieve. The patient and family often had to endure a cruel period of illness with the most severe physical and emotional consequences. Now there is real hope for a reprieve, and for some patients there is not only the possibility of a return to normal life activities but even the possibility of "cure." About 50% of patients achieve a complete remission after chemotherapy of acute myeloblastic leukemia and about half of them remain in complete remission for one year or longer. Unfortunately psychological recovery does not always parallel physical recovery. Patients in documented hematological remission often continue in an invalid state indefinitely. Psychological factors have been described associated with the onset and course of leukemia<sup>1,2</sup> so it is likely that similar forces influence personality adjustment during remission, and conceivably the duration of remission.

Among our patients with acute myeloblastic leukemia in remission, all endured a stormy period of illness, including hospitalization of four to twelve weeks, and septicemia in many cases, during the initial remission-induction treatment. In remission they are ambulatory, at home and symptom-free. They come for examination or ambulatory treatment at intervals on one to four months, and are physically and hematologically

as if the acute leukemia had not occurred. For those patients who remain in remission beyond one year, we estimate the probability of relapse to be about one percent per month at risk, even lower for patients in remission more than four years. Statistics for acute lymphoblastic leukemia have been more favorable than for acute myeloblastic leukemia, but quantitative differences have not altered the qualitative considerations.

The decision to stop chemotherapy, made after three to five years of continuous remission, poses a problem for most of the patients with acute leukemia. They have come to cling to their physicians' reliance upon the role of the drugs in remission maintenance. Yet, treatment continued indefinitely runs the risk of inducing damage to the liver and bone marrow, and may even contribute toward the development of a second malignancy. Clearly there is a point of diminishing return, but there are insufficient data to establish the optimum time for stopping. The physician is ethically bound to explain to the patient the potential risks of continuing and halting treatment. Consequently, not only is the risk of relapse ever-present, but there is also the possibility of harm due to long-term treatment or relapse due to well-intentioned but "premature" interruption of treatment. All add to the psychological burden.

In the case of the chronic leukemias, the generally more benign onset and longer term of the untreated and treated illness blunt somewhat the impact of the initial diagnosis and events surrounding it. Most of these patients are hospitalized for only a few days, if at all, and most receive all of their treatment while ambulatory. For the patients with chronic lymphocytic leukemia the quantitative aspects of disease control and duration of life are better, as a rule, than in chronic myelocytic leukemia, but the qualitative considerations remain the same.

### PROCEDURE

A group of 25 patients in various durations of

\*From Departments of Psychiatry and Medicine, University of Arkansas for Medical Sciences, 4301 West Markham, Little Rock, Arkansas 72201.



remission with regularly scheduled follow-up appointments between December 12, 1978 and June 30, 1979 was selected from about 200 who were diagnosed and treated for acute or chronic leukemia at University of Arkansas Medical Center during the ten year period ending June 30, 1979. Each patient received a meticulous developmental history and clinical psychiatric examination and psychological assessment including studies of personality structure, basic attitudes, areas of conflict and evidence of organic brain impairment. They were then followed on a continuing basis for new developments and overlooked items.

### CLINICAL MATERIAL

All patients were residents of the State of Arkansas, and had been referred along channels ordinarily employed by their physicians for secondary or tertiary level care. All but four came from rural communities or cities of less than 100,000 population. Nine patients were so-called "private patient" referrals, which is a little higher than the proportion among patients with other diseases seen here. Twenty were white, twelve females and eight males and five were black, four females and one male. Agewise two were in their teens, one in her twenties, four in their thirties, seven in their forties, three in their fifties, seven in their sixties and one in her seventies. Occupationally six were in factory work, six homemakers, four were in construction work, three were skilled tradesmen, one each in sales and clerical work, two were students and two had retired. Socio-economically seventeen were in the middle class, six lower middle class and two were upper lower class. Hematologically thirteen were diagnosed acute myeloblastic leukemia, eight chronic myelocytic leukemia, three chronic lymphocytic leukemia and one acute lymphoblastic leukemia. Two patients had been in remission over seven years, one for six years, two for five years, five for four years, one for three years, four for two years, nine for one year and one less than one year. All were being followed by the same hematological oncologist and all were assessed by the same psychiatrist and the same psychologist.

### POST REMISSION ADJUSTMENT

Although these patients were in remission, full return to previous adjustments was not the rule. Of the twenty-five, only one has continued in a regular gainful employment. The six homemakers were functioning at varying levels of efficiency with more or less assistance. A striking

exception in this group is a housewife who not only cares for her family but also does hospital volunteer work, pursues hobbies and serves with her community fire department. Eight of the patients are accountably out of work for obvious reasons. Two were retired and already out of the work force before the onset of their leukemia, two continued disabled due to prior orthopedic disease and four were at the time of evaluation still so frail that work was not feasible. The remainder of the nonproductivity was heavily influenced by circumstances. Employers were reluctant to re-hire because of increased chances of further sick leave or the threat of elevated insurance costs in the event of an exacerbation. Further, those receiving disability compensation were afraid to work regularly lest they lose their predictable benefits. Expedience was also a factor as evidenced by a riverboat machinist who retired rather than run the risk of being far removed from his physician in case he needed help. Though plausible reasons exist for failure to return to work, it is conceivable that several could have done so had they been sufficiently motivated.

### LIFE STRESSES

It appeared that life had dealt sternly with the majority of the group. Within ten years of the onset of leukemia ten of the twenty-five had lost close loved ones through death; six lost one or both parents, two lost children, one a spouse and one a sibling. Other separations included two patients who had been fired from their jobs during this period, two had been divorced and three were in domestic turmoil. Furthermore, the customary routine had been lost as three had been drawn into caring for aged parents in their homes. On a continuing basis, chronic problems with children affected three of the group: one had a brain damaged child, one a schizophrenic and one a rebellious daughter who became pregnant out-of-wedlock.

### PREMORBID PERSONALITIES

The majority of the patients studied revealed more or less conspicuous personality patterns from before the onset of leukemia. Most numerous was a group of eight patients with compulsive driven personalities. Three others had irritable explosive personalities. Trouble with alcohol was reported by two and four were heavy smokers (over two packs of cigarettes per day). Two were simple inadequate individuals bordering on schizoid personalities. One was an antisocial personality and one was illiterate. Over half of

the group manifested one or more psychosomatic disorders. Most prevalent was obesity, in five, with two weighing over 250 pounds. Four reported nervous gastritis, four had severe tension or migraine headaches and two complained of menopausal symptoms. Disabling chronic physical pathology was also present. One patient was a lifelong cripple, two had spinal damage, one had residual disability from a bladder cancer and another was severely allergic. Thus it may be seen that these patients had been involved previously in maladaptations, physical reactions to stress and frustrating handicaps.

### PSYCHOLOGICAL REACTIONS

Conveying the impression of doom that it does, the diagnosis of leukemia had a devastating effect upon eight of the patients in the study group. The stages of adjustment to death as described by Kubler-Ross were in evidence.<sup>3</sup> One patient resorted to excessive alcohol for weeks and another required psychiatric help for depression. Interestingly four reported feelings of relief. They had felt ill from unknown causes for long periods and were glad finally to learn something definite. Fortunate ones achieved remission and with it the need for a new kind of adjustment. They had tended to adjust to dying and now in remission, for however long, they must readjust to living. Generally they clung to the oncologist and continued to identify as patients. Denial was the most frequently employed coping mechanism, with the patients, on an unconscious basis, simply not acknowledging the full brunt of the illness but then denying remission to the extent that they were insecure at the thought of stopping medication. Denial to some extent could be detected in fourteen of the patients. The eight compulsive personalities became involved in more and more activities as if to occupy their minds so as not to think of their problems. At the other extreme the two inadequate personalities capitulated into a kind of dependent passivity. Religious activity was not as strong as could have been anticipated. Previously active religious lives were reported by eight, who said their faith had helped in achieving their present adjustment, and an additional two turned to enthusiastic religious practices. Surprisingly ten continued to follow their religion off and on and four denied any active religious affiliation.

### PSYCHOLOGICAL ASSESSMENT

As might be expected, our leukemia patients exhibited heterogeneous personality characteris-

tics on psychological testing. About half were characterized by rigid defensiveness against admitting psychological stress. Conversion profiles, with accentuation of hypochondriacal-hysterionic features and suppression of depressive affect, were noted at various levels of severity in a number of patients, similar to those seen in renal dialysis patients and would seem to relate to the fact that their lives had been dependent upon physical intervention, such as chemotherapy and transfusions. A possible trend of a different sort was noted among a smaller number of patients who evidenced elevations on a scale indicating angry, hostile, manipulative attitudes. Such features have been shown by Brown to predict poor treatment outcomes in chronic pain patients<sup>4,5</sup> and appear to have been associated with those patients who adjusted less well to their disease remission in this study. It was also interesting to note that a majority of patients showed evidence of shying away from social interaction which might be a reflection of their desire not to burden others with their illness. This study did not permit any strong correlation between personality characteristics and acute-chronic disease states or duration of remission.

### CONCLUSIONS

Inadequate adjustment among leukemia patients in remission is shown to be associated with psychological and situational factors stemming from before and after the onset of the active disease. Further study is indicated to: detect psychological characteristics associated with various types and stages of leukemia; elicit standards for prediction of future adjustment and; to delineate specific points for use in psychotherapy to increase chances of optimal adaptation to remission.

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# Congenital Inguinal Hernia — Management of the Contralateral Side

E. S. Golladay, M.D., and John Lambert, M.D.\*

## ABSTRACT

A child with unilateral inguinal hernia has a statistical probability of contralateral processus vaginalis patency. In a series of 200 patients, contralateral patency of the processus vaginalis was assessed by transperitoneal exploration. When the left side was explored from the right, 43 percent had a patent processus vaginalis. When the right side was explored from the left, the incidence of processus patency was 60 percent. In each case of negative or positive exploration, subsequent surgical exploration confirmed the transperitoneal assessment. The technique is readily taught, quickly performed, and 100 percent accurate in assessment of processus patency.

Congenital indirect inguinal hernias occur in approximately 1 percent of male children and their repair is the most common elective operation performed on children. When an infant presents with a unilateral inguinal hernia, it has long been recognized that a high probability of contralateral processus vaginalis patency exists. However, there is far from unanimity of opinion regarding management of the patent processus. Many surgeons repair only the clinically obvious side; some routinely explore both sides; and some base their decision on age, sex, side, or a combination of these parameters. In multiple reviews concerning the incidence of bilaterality of childhood hernias, (depending upon age, sex, and side), the processus vaginalis is patent in 30 to 95 percent. Snyder, in a collective review, found a 15 to 37 percent incidence of patent processus vaginalis in autopsies on adults without clinical evidence of hernia; whereas, the clinical incidence of hernia in the adult male is considerably less, probably in the range of 5 percent.<sup>1</sup> In a review of unilateral hernia repair in childhood, by Sparkman, a contralateral hernia became clinically apparent in 15 percent of patients in long term follow up.<sup>2</sup>

Kieswetter found that 34 percent of children who had unilateral herniorrhaphies returned to the hospital for a similar procedure on the opposite side.<sup>3</sup> In a review by Gilbert and Clatworthy,<sup>4</sup> the total incidence of positive exploration appeared to be the same irrespective of family

history of hernia, age, history of prematurity, or side explored. The incidence of positive explorations was higher in girls, but only a small number were explored making the statistical significance of this finding questionable. Rowe, Copelson, and Clatworthy felt that 40 percent of patients with a unilateral inguinal hernia will have a patent processus on the other side and only half of these will develop a contralateral hernia sometime during life.<sup>5</sup>

The advantages of contralateral exploration are avoidance of a second operation with consequent reduction in operative and anesthetic risks and costs. However, many operations are performed which may be unnecessary and the incidence of damage to vas deferens or testicular blood supply ranges from 1 to 2 percent. This risk may be increased by negative exploration. Although inguinal herniography has been utilized to demonstrate those children with a contralateral patent processus vaginalis, this exam has not had 100 percent accuracy.<sup>6</sup> An excretory urogram is additionally provided by that technique, but the procedure takes 45 minutes and is somewhat painful. In addition, the pelvic roentgenogram requires radiation to the gonads and intramural hematoma of the small bowel has been reported.<sup>7</sup>

In 1964 Brown introduced the method of transperitoneal probing of the opposite processus vaginalis to detect patency.<sup>8</sup> Kramer and Davis, in 1967, reported results in 100 cases.<sup>9</sup> Levy, in 1972, reported his technique in 80 infants. It was found to be accurate in 100 percent of cases.<sup>10</sup>

## MATERIALS AND METHODS

Two hundred consecutive children were operated on for uncomplicated unilateral hernias. The clinically apparent side was approached initially and a recurved Bakes dilator was directed first laterally along the lateral margin of the hernial sac (see Figure 1). Once the peritoneal cavity was reached, the tip of the dilator was directed to the contralateral side along the anterior peritoneal surface. The tip was placed at the lateral margin of the inguinal ligament and then drawn medially. If the tip of the instrument passed 1 cm into a patent processus vaginalis, that

\*Arkansas Children's Hospital, 804 Wolfe Street, Little Rock, Arkansas 72201.

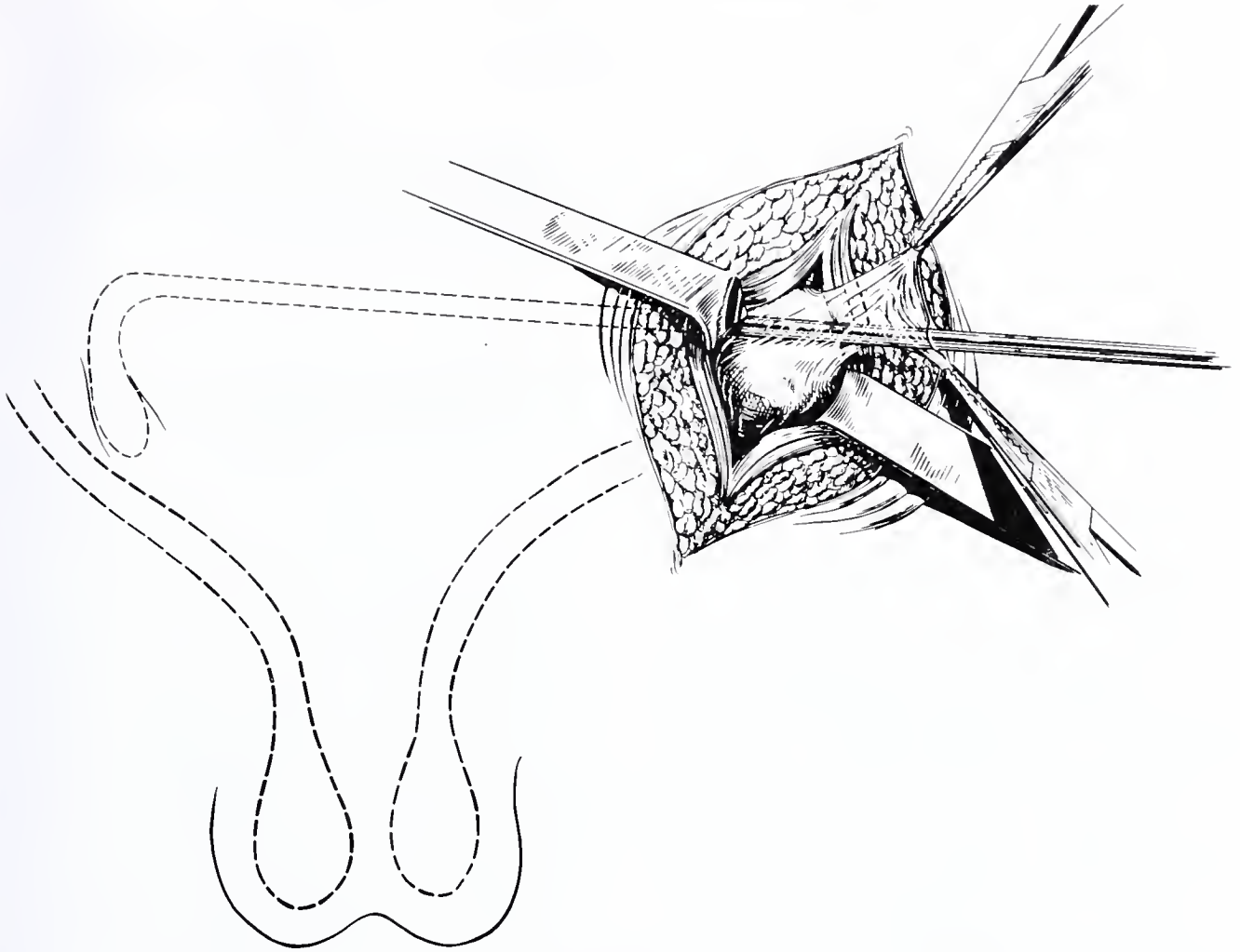


Figure 1.

Line drawing demonstrating technique for transperitoneal assessment of contralateral processus vaginalis.

side was said to have a hernia and explored to confirm the presence or absence of a patent processus vaginalis. If the tip did not pass into the processus vaginalis, that side was explored for presence of patency.

### RESULTS

In a series of 200 patients, 182 were male children and 18 were female. Hernias were clinically apparent on the right side in 112 cases and on the left side in 78 cases. A patent processus vaginalis which was not clinically detectable was found on the right side with a clinically apparent hernia on the left side in 48 cases or 60 percent of the total. A clinically nonapparent patent processus vaginalis was found on the left side in 45 cases or 43 percent when the right side was the clinically apparent side. In each of the cases in which the processus vaginalis was entered, a contralateral patent processus vaginalis was discovered on subsequent exploration. In each of the cases in which the probe exploration was negative, subsequent surgical exploration failed to demonstrate a patent processus vaginalis with one exception. This technique has been used by a number of

resident surgeons since the period of study and is readily taught and used. The average time necessary for probing is only 2 minutes. In short term follow up, the absence of clinically apparent hernias developing on the contralateral negative probe side has further confirmed the accuracy of this technique.

### DISCUSSION

In 1955 Rothenberg and Barnett proposed that bilateral exploration be performed routinely in infants undergoing operations for inguinal hernia.<sup>11</sup> The merits of this policy have been bantered about in numerous subsequent publications and authors have advocated or rejected the policy with equal fervor. Sparkman<sup>2</sup> lists the advantages of routine bilateral exploration as: 1) contralateral hernias in a high percentage of cases; 2) hospital costs are avoided; 3) the child is spared the trauma of a second anesthetic and operation, and 4) the physician is spared the embarrassment of a second hernia. Opponents say: 1) many unnecessary operations are performed; 2) possibilities of technical problems are increased in incidence when a search for a nonpatent



processus vaginalis; and 3) the incidence of patency of processus vaginalis by contralateral exploration is discordant with the appearance of clinical contralateral hernia after a unilateral repair. Fischer and Mumenthaler reported atrophy of the testis in 1 percent of their series of bilateral explorations with a diminution in size of the testis in an additional 2.7 percent.<sup>12</sup> Kiesewetter and Parenzan performed bilateral operations on 100 patients under 2 years of age with unilateral signs of hernia.<sup>13</sup> Contralateral "hernia" was found in 60 percent. A second group of cases studied by these authors consisted of 237 patients who had undergone unilateral repair prior to the age of 2 years and who had been followed for periods of up to 9 years. Seventy three or 31 percent had subsequent development of a contralateral hernia following initial unilateral repair. Sparkman found a collective incidence of 15.8 percent of contralateral hernia following unilateral repair. His conclusions were: 1) there was no contraindication to routine bilateral exploration in females; 2) contraindications to contralateral exploration were premature infants, anesthetic problems, incarcerated hernia, intraoperative technical problems, an inexperienced surgeon, or a prolonged case.

The technique described is very accurate, simple, brief, and obviates most of the disadvantages ascribed to bilateral exploration. Since a patent processus will develop into a hernia in approximately 50 percent of cases in relatively short term follow up and perhaps even more with longer evaluation, there will be a very limited number of unnecessarily performed procedures. In addition, perioperative confirmation of processus patency by contralateral probing should limit

testicular vessel injury and damage to the vas deferens.

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# Office Orthopaedics

## The Nature of the Problem — and State of the Art

Kenneth G. Jones, M.D.\*

In 1971 the Committee on Injuries for the American Academy of Orthopedic Surgeons published a 304 page text on the Emergency Care and Transportation of the Sick and Injured for the emergency medical technician. Properly, since the thrust of that publication was lifesaving, less than five pages could be devoted to injuries to the upper extremities. As a consequence of instruction in the first medical care being oriented to the dramatic, the technician and his instructor, the physician, may not be fully aware of the extensive morbidity which attends injuries and disease of the upper extremities.

To assess the magnitude of this morbidity in the United States, a soon-to-be-published study was made for the American Society for Surgery of the Hand. It will present a great deal of data which will be of interest to all of us in the health field. For example:

1. About one-third of all injuries involve the upper extremities.
2. Each year in the United States there are about 16,000,000 upper extremity injuries which are of sufficient severity to bring about restriction of activity or a visit to a physician.
3. Upper extremity injuries are responsible for about 90,000,000 days of restricted activity and 16,000,000 days lost from work in a year.
4. Two-thirds of upper extremity injuries occur to individuals in their working years.
5. There are about 500,000 inpatient hospitalizations, 6,000,000 visits to hospital emergency rooms, and 12,000,000 visits to physicians

each year because of upper extremity injuries.

6. Approximately 20% of sports injuries involve the upper extremities.

Medical problems, other than trauma, involving the upper extremities create like morbidity.

1. Osteoarthritis ranks second and rheumatoid arthritis seventh among conditions for which workers' disability is granted.
2. In addition, there are 4,000,000 persons affected with non-arthritic synovitis, bursitis, or tenosynovitis of upper extremities many of whom receive some form of compensation.
3. Half of the stroke survivors are disabled with paralytic effects. While 70% will eventually walk, only 15% will achieve restoration of useful hand function.
4. 15-20% of congenital anomalies involve the upper extremities.
5. Cerebral palsy and other neurological disorders augment, to a significant extent, the total morbidity arising from afflictions of the upper extremities.

It is estimated that the total cost of upper extremity disorders in the United States in 1980 will be \$10,000,000,000 of which less than \$3,000,000,000 will be medical. Lost earnings, insurance costs, and administrative costs will account for the greatest share, notwithstanding self-serving political polemics.

Like all of medicine, reconstruction and rehabilitation of the upper extremity have experienced a great expansion of the possible during the past half century. When A. B. Kanavel published

\*Little Rock Orthopedic Clinic, P.A., 9500 Lile Drive, P. O. Box 5270, Little Rock, Arkansas 72215.



his classic monograph on "Infections of the Hand" in 1912, the treatment of the hand was primarily a matter of the prevention of infections and/or the management of those infections which followed wounding. Alignment and immobilization of fractures was quite inexact at that time. Penicillin, when introduced in the early forties, permitted the surgeon to search for improved methods of management of all the injured tissues of the hand. The prevention of infection by proper wound debridement and the judicious use of antibiotics has made possible much of which has followed.

We soon found our skin grafts need not be lost to infection. They will flourish when placed on non-infected viable beds. Contracted coverings of scar which distort and limit the excursion of tendons and joints can be largely eliminated by early adequate coverage. In addition to providing cover, pedicle flaps from local and distant areas are now routinely placed successfully to permit gliding of tendons and to increase joint motion. With the introduction of the surgical microscope, the possibilities in this area have again been augmented. A free composite tissue graft now can be taken in one stage with its blood supply being restored by anastomosis of its arterio-venous pedicle to the local vessels.

Early and improved skin coverage has permitted those persons interested in hand problems to become more aggressive in the employment of bracing and physical therapy. The period required for immobilization which contributes to fixation of tissue can be shortened. The fibrotic hand offers few opportunities for rehabilitation. Static and dynamic bracing, when indicated, can assist the recovery of both passive and action motion. Whirlpool, exercise, muscle stimulation, and the empathy of skilled physical and occupational therapists have made it possible for many patients to return to normal or near normal activities, or to live with that which cannot be changed.

The control of infection has also allowed the surgeon to improve on techniques of tendon repair. He can choose, in many instances, between early primary, delayed primary, or delayed tenorrhaphy electing to perform the indicated procedure under the best circumstances possible. No longer must he feel compelled to engage in the midnight emergency room suturing of isolated cut finger tendons under less than ideal circumstances.

Massive trauma continues to be a true emergency.

Under ideal circumstances, repair of both the superficialis and profundus tendons may be undertaken in "no-man's-land" with anticipation of a satisfactory result. Tendon grafting, one stage or two stage, expands greatly the possibility for reconstruction. In the latter instance, a silastic rod which acts as a mold to permit the development of a pseudotendon sheath is introduced at the first operation and replaced at a second much less extensive operation by a tendon graft. This procedure is proving to be of value when primary tendon grafting is not possible. Tendon transfers, where indicated, continue to benefit the maimed or diseased hand. Tendon surgery has come a long way, but the techniques required for success are demanding and unforgiving of error.

Nerve: Neurorrhaphy, until recently, had not improved very much since its advent. But introduction of the surgical microscope has made it possible and practicable to perform fascicular repair of peripheral nerves with suture material as small as 10-O to 14-O nylon. The surgeon can now more closely restore the anatomy of the damaged nerve than he could ever do with 6-O silk. Studies of serial sections of peripheral nerves have demonstrated the need for the most accurate reapproximation possible of cut ends if useful restoration of function is to be anticipated. By this technique, digital nerves can be resutured as far distal as the trifurcation of the nerve at the level of the distal interphalangeal joint. Improved sensory function can be anticipated. The motor supply to a lumbrical muscle, derived from the ulnar nerve, has been successfully anastomosed to the motor branch of the thenar muscle mass where the median nerve has been irrevocably destroyed at a higher level to restore opposition in the hand. Nerve grafts, often from the sural nerve are now routinely used to bridge defects when needed. Grafts may be placed as single or multiple strands depending on the diameter of the damaged nerve. Results are regarded to be superior to reapproximation of nerves under tension. Today nerve repairs should be followed by improved function.

Fractures: While absolute rigid fixation, in the hand as elsewhere, has been overstressed by some since there is a great deal of data which suggests that some motion may actually expedite bone healing, one cannot oversell the need for anatomical reduction and the maintenance of that reduc-

tion of fractures in the hand and forearm. Oblique fractures and articular fractures whose inherent instability is augmented by muscle pull will displace, as a rule, during the healing process unless some mechanism is introduced to neutralize that instability. The most applicable means is "percutaneous pin stabilization" for either simple or compound fractures. This usually can be applied without exposing the fracture through an incision. When traction or manipulation can reduce the unstable fracture maintenance of the reduction during healing can be assured by passing one, two, or, on occasions, three small Kirschner wires through the skin and across the fracture site. A fractured bone may be pinned temporarily to a normal bone for supplemental support if needed. The pins should be bent and tied together outside the skin to gain added rigidity and removed at three to six weeks without additional anesthesia. Successful employment of this technique requires a powered drill for accurate pin placement. Early motion, one to three weeks post operative, can be started. In those instances where open reduction must be resorted to in order to align the fragments, it should be used. Distraction by extrasketal means is a technique which has application on occasions, especially in the case of the extremely comminuted Colles'-like fracture. Internal fixation of the small bones of the hand is seldom indicated or justified as it requires an open reduction, and the same end—early restoration of activity while maintaining reduction—can be accomplished by less complicated and less complicating methods. Pins should not be passed across tendons, nerves, or blood vessels!

Recent appreciation that the metacarpals can be unstable in subtle ways and that the nerves may be compressed as they traverse the wrist, have initiated a better understanding of the "painful wrist."

**Blood Vessels:** Vessels of the hand thrombose due to trauma, they occlude due to disease, they are punctured producing arterial and arterio-venous aneurysms, and they are transected. One healthy digital artery will carry a finger, but two are better. And now with the surgical microscope it is possible to suture vessels as small as one millimeter in diameter with the expectation that many will remain patent. Also, vein grafts can be used to bridge arterial defects. As in large vessels,

results are rewarding. The microscope is an especially valuable tool for augmenting the precarious blood supply of a part—something not generally considered possible a decade ago. Re-implantation in many centers is no longer a question of "will it survive?". The questions now being asked are: "What will the functional results be" and "Which cases should have the amputated part replanted?" All parts and all patients will never be suitable for reimplantation. This, too, has become clear.

Another surgical arena where the surgical microscope is having an impact is in the area of composite grafting. The great toe is being transferred to the stump of the thumb with increasing frequency to form what may be called a "thoe". Many patients like their new thoe. Pollicization of a finger to form a substitute for a missing thumb, an operation long helpful to the hand surgeon, may become the back-up rather than the primary procedure. A single large block of composite tissue such as an iliofemoral or groin graft can be lifted with an arterio-venous pedicle and transferred in one procedure to the hand (or elsewhere) to be immediately revascularized by anastomosis of its vascular pedicle to that of the host area. Once again, in selected instances, this can reduce morbidity from months to days with improvement in the ultimate function. Surgeons are aware sympathectomies of the trunk are not always successful in alleviating the symptoms due to vascular deficiencies of the hand though at times they do help. With the microscope we can now perform sympathectomies of the digital arteries by stripping the adventitia from the wall of the vessels. This procedure is proving helpful in management of Raynaud's disease, frostbite, scleroderma, and post traumatic vasospasm.

To acquire the skill demanded for these techniques, the surgeon must have an adequate surgical microscope, proper instruments, and a microsurgical laboratory where he can refine and retain those skills through periodic operation on small animals such as rats and rabbits. All well trained surgeons in the future will have to be familiar with, if not skilled in, this new frontier since it finds some application in almost all divisions of surgery.

And last but not least, Arthritis: During the last half century, surgery and therapy for the arthritic patient has been greatly expanded. No



longer must many of those so afflicted with this scourge suffer in silence. The realization that rheumatoid arthritis is primarily a disease of synovia, rather than of bone and cartilage, made it possible to view this morbid process from an entirely different therapeutic perspective. Earlier these patients so in need of medical assistance were largely passed over. They were neglected solely because medical science had so little to offer them. Once we realized that the disease was primarily of the synovia—drug induced and surgical synovectomies to prolong the functional life of joints became more widely used. In selected instances when joints have been destroyed, resectional arthroplasties with silastic spacers, introduced to maintain improved alignment, can be of great benefit to those needing help. Joint fusions and tendon repairs continue to be useful.

The management of osteoarthritis has also been augmented by new found skills, techniques, and new equipment. Silicone prostheses have applica-

tion to the thumb, the fingers, the metacarpal, and the forearm.

Even though the physician's quest will ever be for restoration of the normal, even today, hand surgery is often a question of salvage. Medical and surgical "worth" should be determined by evaluation of "what now is" relative to "what was" before treatment rather than relative to the normal. The final functional "result" is a matter of total possibilities for the patient. Hopefully our surgery will have augmented those possibilities.

It is no longer satisfactory to regard the injured or diseased hand to be of secondary importance. Today, the patient who has survived massive head, chest, or abdominal trauma may at a later date be more concerned with the residual functional deficiency of his hand than he is in expressing his gratitude to those who have salvaged his life.

Today, there truly is a new world in hand surgery.



## ELECTROCARDIOGRAM



## OF THE MONTH

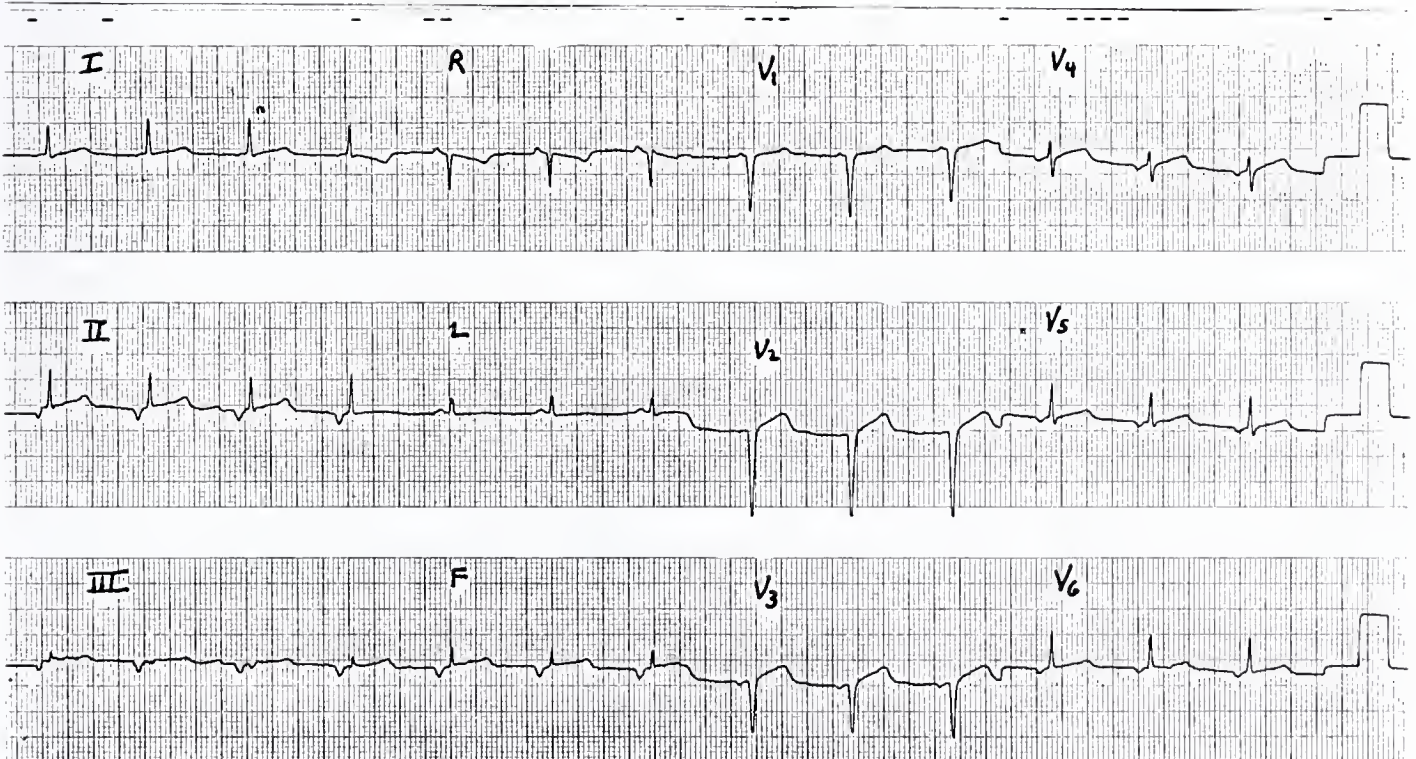
The Department of Cardiology, University of Arkansas College of Medicine

(See Answer on Page 507)

**HISTORY:** M. B. is a 32-year-old female in her eighth month of pregnancy. She experienced significant chest pain associated with cardiac arrest early in her gestation. Her only known cardiovascular risk factor is cigarette smoking. Presently, her cardiovascular examination is normal. A chest film done in her third trimester shows a normal heart size and normal pulmonary vascularity. The patient's current ECG is shown.

Based on her ECG and clinical picture, which of the following statements are true and which are false.

1. She is in sinus rhythm.
2. She likely has sustained a myocardial infarct.
3. She is likely to develop congestive heart failure.
4. A pacemaker is needed now.
5. Vaginal delivery should be attempted at term.



John W. Watson, M.D.

Assistant Professor

Division of Cardiology

University of Arkansas for Medical Sciences

4301 West Markham

Little Rock, Arkansas 72201



# Pediatric Review:

## Monitoring Antibiotic Resistance in Arkansas

Richard F. Jacobs, M.D.,\* Kathy D. Eisenach, M.S., MT (ASCP),\*\* and  
Terry Yamauchi, M.D.\*\*\*

Susceptibility testing to determine the activity of a specific antimicrobial agent against a variety of microorganisms or the susceptibility of a particular microorganism to a number of antimicrobial agents has been used for a number of years.<sup>1</sup> These results aid the physician in choosing the most efficacious therapy against a particular infectious agent. Such *in vitro* tests have been felt to be somewhat artificial as they do not reflect the role of host defense mechanisms or the effects the drug may have on host tissues. However, with an understanding of the disease process being treated and the pharmacologic properties of the drug used, susceptibility testing remains an invaluable aid in medicine. The first requirement of rational antimicrobial chemotherapy and a prerequisite to susceptibility testing is the proper collection of appropriate cultures prior to antibiotic intervention and the isolation and identification of the etiologic agent(s).<sup>2</sup>

Following isolation of the microorganism and while microbiologic and biochemical identification are being carried out, the laboratory determines the *in vitro* sensitivity of the microorganism to a variety of antimicrobials. These susceptibility tests supply important information when the patient is not responding to the antimicrobials being used or when the organism isolated is prone to resistance to one or more of the commonly used drugs. Susceptibility testing for organisms that are uniformly sensitive to an effective antibiotic should be available since even the old mainstays: group A *Streptococcus pyogenes*, *Streptococcus pneumoniae*, and *Streptococcus viridans* have shown periodic resistance to penicillin.<sup>3,4</sup> These organisms should only be tested if there is a clinical failure to respond to the appropriate antibiotic at an adequate dose after a therapeutic length of time.

There are two commonly used methods of testing susceptibility: the disc diffusion technique

and dilution testing.<sup>2</sup> Briefly, the disc diffusion method gauges the size of a zone of inhibition (no growth) around standard antibiotic discs placed on a culture plate streaked with the microorganism.<sup>2</sup> If carefully performed and analyzed according to standardized values this method can provide precise and accurate results. The major limitations that are not always fully appreciated include: 1) this technique has been standardized primarily for rapid-growing microorganisms that use standard media. Slow-growing pathogens can not be assayed as accurately; 2) this method does not measure bactericidal activity; 3) combinations of two or more antimicrobials can not be assayed simultaneously; and 4) microorganisms that are classified resistant by this method may actually be sensitive to the antimicrobial at concentrations attained in that body fluid. For these reasons dilution testing has been initiated in many laboratories.<sup>5-9</sup>

In dilution testing, a uniform inoculum of the microorganism is placed in media with a serial dilution of the specific antimicrobials to be tested. Following overnight incubation, the lowest concentration of the drug required to inhibit the growth of the microorganism is determined by examining the media for macroscopic evidence of growth. The concentration which inhibits growth and thus reflects failure of replication (a static effect) is referred to as the "minimum inhibitory concentration" or MIC. This is as far as most laboratories will and should analyze the pathogen.<sup>10,11</sup> Prepared kits for MIC testing are now available and have both economized and streamlined the process. For analysis and varying interpretations of the true meaning of MIC's, we refer you to references 2, 10, and 11. Also, for a review of antimicrobials and pediatric infections with their recommendations for therapy, we would refer you to references 3 and 4.

To emphasize the importance of susceptibility testing and the accurate recording of such results, the "antibiogram" from Arkansas Children's Hospital for 1979 is shown (Table 1). The continuing analysis of such data allows the physician current information on appropriate antibiotics for his

\*Chief Resident, Department of Pediatrics, University of Arkansas for Medical Sciences, Little Rock, Arkansas.

\*\*Department of Pathology, Arkansas Children's Hospital.

\*\*\*Department of Pediatrics, University of Arkansas for Medical Sciences.

Mailing address: Terry Yamauchi, M.D., Department of Pediatrics, University of Arkansas for Medical Sciences, 4301 West Markham Street, Little Rock, Arkansas 72201.

TABLE 1  
Arkansas Children's Hospital  
Antibiotic Sensitivity Percentages Summary  
January - December, 1979

	# of Strains	AMIKACIN	AMPICILLIN	CARBENICILLIN	**CEFAMANDOLE	CEPHALOTHIN	CHLORAMPHENICOL	CLINDAMYCIN	COLISTIN	ERYTHROMYCIN	FURADANTIN	GENTAMICIN	METHICILLIN	PENICILLIN	TETRACYCLINE	TRIMETH/SULFA	TOBRAMYCIN
<i>E. coli</i>	445	96	46	49	89	78	93		99		99	93			84	99	93
<i>Klebsiella pneumoniae</i>	255	96	1	1	68	63	62		97		72	62			91	86	62
<i>Proteus mirabilis</i>	82	98	76	78	95	74	68		2		8	99			0	98	99
<i>Proteus morganii</i>	17	100	12	88	76	18	88		6		41	100			53	100	100
<i>Proteus vulgaris</i>	10	100	20	70	40	10	70		10		30	100			30	100	100
<i>Enterobacter cloacae</i>	86	99	19	93	97	6	98		99		85	98			89	98	98
<i>Enterobacter agglomerans</i>	21	100	48	48	100	76	95		95		76	95			100	95	95
<i>Enterobacter aerogenes</i>	15	100	25	42	27	17	58		42		83	58			100	83	58
<i>Serratia marcescens</i>	21	95	29	76	40	0	76		29		14	86			19	81	76
<i>Citrobacter</i>	29	100	41	83	93	31	100		100		90	100			97	97	100
<i>Providencia stuartii</i>	44	100	11	18	100	7	0		0		7	4			0	11	9
<i>Shigella flexneri</i> *	52	100	37	37		100	100		100		100	100			100	100	100
<i>Shigella sonnei</i>	44	100	57	57	100	77	100		100		100	100			50	99	100
<i>Salmonella</i>	78	100	87	91	100	91	99		100		99	97			79	97	99
<i>Acinetobacter anitratus</i>	46	85	6	59	6	0	11		91		2	91			83	96	85
<i>Acinetobacter lwoffii</i>	15	93	47	73	63	40	67		60		0	87			87	100	93
<i>Pseudomonas aeruginosa</i> *	306	80	1	68	0	0	4		97		0	85			9	6	99
<i>Enterococcus</i>	127	0	99	96	23	2	97		0		95	5			43	72	3
<i>Staph coag pos</i> *	860		3			100	100	100		94		87	100	3	93		87
<i>Staph coag neg</i> *	119		22			99	90	71		52		67	58	19	65		65

\*Blood and CSF isolates only

\*\*Cefamandole tested routinely since July 1.

These results were obtained by the Kirby-Bauer disc diffusion method. Blood, CSF, and urine isolates have been tested for minimal inhibitory concentrations (MIC's) by a microdilution susceptibility method since October 1.

patient's infectious agents. Equally important is the understanding that geographic or regional trends in antibiotic resistance are invaluable to practicing physicians and require constant surveillance. Of particular note in the antibiogram for 1979 were: 1) the declining sensitivity of *Pseudomonas aeruginosa*, commonly seen in children with cystic fibrosis and leukemia, to carbenicillin and gentamicin; 2) poor sensitivity of *staph. coagulase negative* to methicillin (58%) while *coagulase (+) Staph. aureas* was 100% sensitive; 3) the declining sensitivity of shigella species and salmonella to ampicillin; 4) the high percentage of ampicillin-resistant *Haemophilus influenzae* (range 18% in eye cultures to 32% in blood cultures; there have been no strains of chloramphenicol-resistant *Haemophilus* identified to date in Arkansas), (Table 2). Ampicillin resistance is determined in the laboratory according to the microorganism's ability to produce beta-lactamase, an enzyme required for cleavage of the ampicillin ring thus rendering the drug ineffective; and 5) the relative insensitivity of the gram negative rods encountered in pediatric urinary tract infections (UTIs) to ampicillin. These values are given realizing that ampicillin is concentrated in the urine at levels 50-100 times those

attained in sera. Therefore, unless urinary MIC's are available, the clinical course and urinalysis plus subsequent culture results should still be used to analyze children with UTIs on ampicillin.

Finally, of interest and importance would be the yearly compiling of such antibiograms to analyze trends in antibiotic sensitivity and therefore allow considerations for using different drugs with certain patient populations and pathogens. As examples, the changing susceptibility of *E. coli*, *Shigella flexneri*, *Shigella sonnei*, and *Haemophilus influenzae* to ampicillin over the past seven years at Arkansas Children's Hospital as demonstrated in Figure 1. It is the consideration of all the aforementioned problems: antibiotic resistance over the past seven years and trends in sensitivity for 1979 that establish the recommendations for antimicrobial therapy in pediatric infectious disease.

As stated in the text of this paper, sensitivities of microorganisms listed in the tables reflect the character of microorganisms isolated at Arkansas Children's Hospital and are not recommended as a guide to antibiotic sensitivities throughout the State of Arkansas.

For further information on disc or MIC testing, resistance patterns, or recommendations for anti-



TABLE 2

Arkansas Children's Hospital

Ampicillin Resistant Hemophilus influenzae Detected by B-lactamase Production  
January - December, 1979

SOURCE	NO.	SENSITIVE (%)	RESISTANT (%)
CSF	19	14	5 (26)
Blood	22	15	7 (32)
Trach/Sputum	66	50	16 (24)
NP/Nasal	31	26	5 (16)
Eye	83	68	15 (18)
Wound	<u>22</u>	<u>17</u>	<u>5 (23)</u>
	243	190 (78)	53 (22)

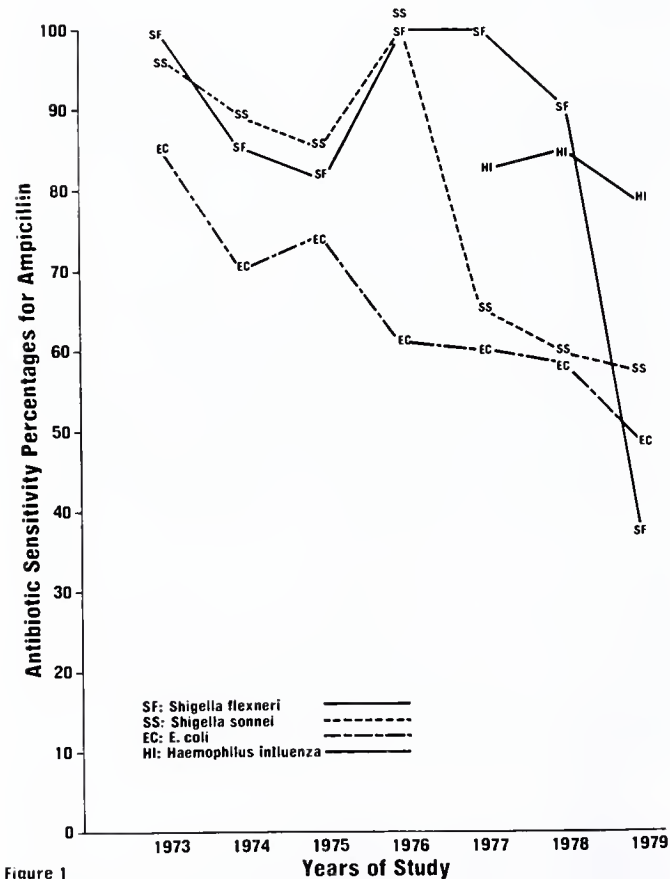


Figure 1

microbial use, please feel free to contact the authors.

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## EDITORIAL

# Gastro-Intestinal Hormones

Alfred Kahn, Jr., M.D.

New information about hormones has been reported at a rate which prevents most physicians from staying current concerning the many facets of endocrinology. For this reason, comprehensive review articles have been particularly helpful to the practitioner. For example, gastro-intestinal hormones have been reviewed by Walsh, Tompkins, Taylor, Lechago, and Hansky (*Annals of Internal Medicine*, Vol. 90 p. 817, May 1979). In his introduction Walsh points out many of the recent advances in dealing with the major hormone—gastrin, secretin, cholecystokinin, insulin, and glucagon—have been possible by the advent of radioimmunoassay. He further relates how these hormones which are peptides exist in multiple forms, exist in various tissues including the nerves, and produce specific syndromes from over production as in tumors; tumor peptide hormones have been discovered, too. These hormones may be produced in excess by specific tumor cells as gastrinoma, insulinoma, glucagonoma, and others.

In the same article, Tompkins reviewed the so-called pancreatic cholera syndrome which is characterized by severe diarrhoea, associated with the loss of fluid and electrolytes. This syndrome is usually caused by vasoactive intestinal polypeptide or VIP. This seems to be related to secretin. The VIP is usually overproduced in a small pancreatic tumor or neural crest tumor. VIP causes a marked loss of potassium and the patient with this syndrome gets severely acidotic. If the tumor has spread beyond a local site, streptozocin is said to be helpful when arterially infused. VIP may be produced in multiple microadenomata and lead to the diarrhoea syndrome. These tumor cells are derived from the so-called APUD system—cells which show amine precursor uptake and decarboxylation. Most of the gut and pancreatic peptides tend to inhibit gastric secretion and

stimulate the secretion of water and electrolytes, according to Walsh.

Pancreatic polypeptide was reviewed by Taylor. It is seemingly produced in a special cell in the pancreas; this cell is found throughout the pancreas—islets, ducts, acini. Pancreatic polypeptide stimulates basal acid secretion in dogs. It seems to be released as a result of neural stimulation in animals; in humans pancreatic polypeptide may be released as a result of neural stimulation releasing a substance which in turn releases the polypeptide. Pancreatic polypeptide has been studied to see if it is a marker for APUD tumors; there is no real proof of this hypothesis. The value of measuring pancreatic polypeptides to determine clinical disorders is unclear at the present.

Lechago has summarized the work currently being performed to determine the cells of origin of the pancreatic hormones. Carcinoid tumors appear in the gut and other tissues; they are made up of silver staining (argentaffin) cells. Carcinoid tumors may produce large quantities of serotonin which produces the carcinoid syndrome. Gastrinomas are most often found in the pancreas, but may be found in the duodenum or stomach. The gastrinoma secretory granule seems to vary morphologically from the typical G cell in many tumors. VIPomas are usually pancreatic in location. Their cells contain VIP and occasionally they also contain Prostaglandin E. Ganglioneuromas may be associated with excessive VIP production. As noted above, glucagonomas and somatostatinomas are known to exist in the pancreas and gut.

Hansky, in the same conference, stated that secretin can now be measured in very small amounts by radioimmunoassay; secretin when released causes the pancreas to secrete bicarbonate



and water; it is made in the S cell of the small bowel and is released by acid effect on the duodenum. There is no syndrome from excess secretin cholecystokinin. It seems to exist in several forms: a small molecule and two larger molecules. It is difficult to assay. It causes contraction of the gall bladder and pancreatic protein secretion. Cholecystokinin does not apparently produce any endocrine syndromes in excess or deficiency, Hansky states. It is of interest that it has also been found to be present in the brain. Hansky says that gastric inhibitory polypeptide tends to inhibit gastric secretion; however, it also is said to be insulinotropic. Glucagon is made in pancreatic A cells. Excess glucagon from tumors causes a syndrome of diabetes mellitus, stomatitis, anemia, and a necrosing erythema of the skin. Similar to glucagon is enteroglucagon which de-

rives from the enteroglucagon cells of the gut; enteroglucagon exists in two forms and a syndrome of excess is still not defined clearly. Somatostatin inhibits growth hormone and is made in D cells found in the gut and pancreas. Hansky states that somatostatin inhibits gastrin, insulin, glucagon, secretin, and cholecystokinin; motilin and VIP release are inhibited also. It tends to act locally and inhibits partially gastric acid secretion, gall bladder contraction, and the release of pancreatic enzymes.

The understanding of gastro-intestinal hormones is still in the early stages. Walsh and his group have directed attention to some of the better established information—and Walsh in closing states that these hormones may act as endocrine striking distant cells or paracrine effecting adjacent cells or as neurotransmitters.



## *"From Other Years"\**

*Arkansas Medical Monthly*

Vol. 1 No. 1 April, 1880 pp. 35-36

### **FIRST ANNUAL COMMENCEMENT EXERCISES OF THE MEDICAL DEPARTMENT OF THE ARKANSAS STATE UNIVERSITY**

The First Annual Commencement Exercises of the above school took place at the College Building in this city (Little Rock) on the evening on the 2d of March, 1880, in presence of a large audience. The president of the faculty, Prof. P. O. Hooper, M.D., introduced Gov. William R. Miller, who spoke at some length in congratulatory terms of the institution and its founders. . . He congratulated them upon their adoption of the graded system of advanced medical education, and the class upon their appreciation of its requirements. After many words of kind advice directed to the first and only graduate of the school who stood before him, in the person of T. Pinson, of Eldorado, Ark., Gov. Miller conferred

the diploma, and closed his remarks with many expressions of good wishes for the continued prosperity of the school. Prof. Edwin Bently, M.D., then appeared before the audience and delivered the valedictory address, in which he gave a most eloquent and exhaustive review of the history and progress of medicine and surgery, embodying in his remarks many beautiful sentiments appropriate to the occasion. His farewell to the class, expressed in a touching poem, was read with feeling and received by the audience with evidences of much appreciation.

\* \* \* \*

*Arkansas Medical Monthly*

Vol. 1 No. 1 April, 1880 pp. 36-37

The Fifth Annual Session of the Arkansas State Medical Society will convene in the city (Little Rock), on the fifth day of May next. Railroads extend the benefit of half fare to delegates, and our hotels propose liberal reductions to them while engaged in their respective duties here. We hope to see every county in the state represented, and every doctor come willing and prepared to cast his shovelful of dirt upon the 'buried hatchet,'

\*From the University of Arkansas for Medical Sciences Library, History of Medicine/Archives.

smoke the pipe of peace, and mark the occasion as the beginning of a new era, and a consequent 'boom' in medical organization in this state.

\* \* \* \*

*Arkansas Medical Monthly*  
Vol. 1 No. 2 May, 1880 p. 92

### BALL AND BANQUET.

The ball and banquet given on the night of May 6th, by the physicians of Little Rock to the members of the State Medical Society, at Concordia Hall, was a grand success. The ladies of the Episcopal Church, by whom the supper was furnished, deserve a great deal of credit for the magnificent feast which they spread before the guests. After two days of tedious labor in convention, the doctors were hungry and eager for the relaxing influences of such an occasion—this 'fellow feeling made them wondrous kind,' and they enjoyed themselves accordingly.

\* \* \* \*

*Arkansas Medical Monthly*  
Vol. 1 No. 1 April, 1880 pp. 42-43

The Ladies' Benevolent Society hospital of this city, is an institution deserving more appreciation than is generally accorded to it by our citizens. The indefatigable zeal of its founders in supporting it so long in despite of many discouraging circumstances, indicates a true principle of charity and a spirit of undoubted christianity. We think it incumbent upon the medical profession to use their utmost endeavors to induce the city and state legislative bodies to make a liberal appropriation for the sustenance of this noble enterprise.

\* \* \* \*

L.B.A. Hospital, March 31, 1880.—No. of patients in hospital January 1, 1880, 26 male, 10 female, 4 colored, total, 40; patients admitted for the last three months, 40 male, 8 female, 7 colored, total, 55; patients died during the three months, 5 male, 2 female, 2 colored, total, 9; No. of patients in hospital April 1, 1880, 16 male, 8 female, 7 colored, total, 31. Physicians who have given their services to the hospital during the last three months are Drs. Jennings, Dibrell, Waters and Jones. Cause of death, male, 1 dropsy, 1 dysentery, 1 uraemic convulsions, 1 asthma, 1 pneumonia; female, 1 syphilis, 1 of burns; colored, 1 pneumonia, 1 surgical injury.

\* \* \* \*

*Arkansas Medical Monthly*  
Vol. 1 No. 2 May, 1880 p. 96

### INFIRMARY.

Little Rock needs an infirmary. There is not a more inviting field for an enterprise of this kind in the union, than is presented here. A great number of invalids go from the southwest every year to St. Louis and other more northern cities, to be treated for chronic diseases and to have surgical operations performed. A great many more suffer and die for want of means necessary to pay traveling expenses to these places, who might afford to come here. Our hotels and boarding houses very properly refuse to be converted into hospitals, therefore no choice is left those people but to go where they can get skilled nurses and other accommodations. We hope some of our leading physicians and surgeons will soon undertake the establishment of such an institution.



### ARKANSAS MEDICAL JOURNAL NEWS BRIEFS

R. Sloan Wilson, M.D., of Little Rock, recently attended the IVth World Congress, Society of Eye Surgeons of the International Eye Foundation in Nairobi, Kenya. He presented a talk entitled "A Rational Approach to the Melanoma Controversy" and also visited rural hospitals and ophthalmology clinics.

\* \* \* \*



### ANSWER—Electrocardiogram of the Month

DISCUSSION: The ECG reveals a PR interval of 0.12 seconds, P-wave inversion in II, III, AVF, and V<sub>2</sub>-V<sub>6</sub>. This is other than a sinus rhythm and most physicians would consider this to be either an atrial or an AV junctional rhythm. This mechanism alone would not in this setting force one to pace the patient. The QS complexes in V<sub>1</sub>-V<sub>3</sub> are suggestive of remote anterior infarction. Most patients who ever develop congestive heart failure do so before the eighth month. There is not much experience with myocardial infarction in pregnancy, but most physicians in our institution favored vaginal delivery in this patient. Thus, 1., 3., and 4., are false.



## MEDICINE IN THE NEWS



### THE MONTH IN WASHINGTON

The Senate has adopted legislation constraining the Federal Trade Commission's authority and by only two votes failed to approve an amendment specifically blocking the agency from further activities against the medical, legal, dental, veterinary and other health professions as well as their respective nonprofit associations.

On the same day, the U. S. Court of Appeals in Washington, D. C. sent back to the agency its proposal to prohibit all state restrictions on the advertising of eyeglasses and services, suggesting that the FTC may have gone too far in pre-empting states' powers.

Apparently mindful of the hostility building up in Congress, the FTC on the eve of the Senate vote refused to take any immediate action on staff proposals to limit physicians' membership on the boards of Blue Shield plans. The matter was made a proposal for public comment on what course the agency should take, including the option of no action at all.

The amendment defeated 45 to 47 on the Senate floor would have prohibited the FTC for two years from overriding state laws and pre-empting state regulations covering the legal and health professions. It would not have affected current FTC cases, including the decision to act against the American Medical Association's ethical strictures against improper advertising.

Sen. Wendell Ford (D-KY), floor manager of the Senate bill, argued against the amendment on grounds that it might jeopardize the entire measure. But he said he was sympathetic and "vigorous" hearings on the issue would be scheduled soon. Ford also said he had talked with the FTC and it had "agreed to hold off."

Sen. James McClure (R-ID), sponsor of the amendment, told the Senate that since 1976 the FTC has sought "questionable statutory jurisdiction over nonprofit professional associations by pursuing complaints against the American Dental Association, the AMA and various state and local nonprofit professional associations regarding ethical restrictions on advertising of professional

services." He said the FTC proceedings have continued despite the fact that the associations have conformed their ethical codes with the Supreme Court decisions in the field.

The Senator noted that 17 state attorneys general had joined the optometric and medical professions in protesting the "eyeglass" FTC ruling.

"We believe it is time for Congress . . . to call a temporary halt to this uncontrolled misallocation of public funds, and to begin to rectify these unnecessary and unauthorized acts of the FTC by which it is attempting to substitute its 'legislation' judgment for that of the respective states and Congress."

Under a Senate amendment, approved 87-10, the House and Senate Commerce Committees would have 20 days to review an FTC rule before it could take effect. If either committee objected, both House and Senate would have to agree within 60 days with the President concurring for the rule to be invalidated.

The House FTC bill would allow either House or Senate to reject an FTC trade rule within 60 days, the so-called one house vote.

AMA Executive Vice President James H. Sammons, M.D., has sent a letter to the senators who supported the McClure amendment commending them for their stand.

\* \* \* \*

Sen. Richard Schweiker (R-PA) has introduced a comprehensive health manpower bill that would eliminate capitation aid to medical schools and sharply scale down the size of the National Health Service Corps.

Aid would be provided students, but the bill "while recognizing the high cost of training, signals an end to the free ride," Schweiker said. "I believe we should continue student aid because otherwise the health professions would be only for the very rich."

Schweiker, top Republican on the Senate Human Resources Subcommittee on Health, said his bill aims at fiscal constraint and use of inducement rather than regulation.

The bill would establish a new student loan program, utilizing existing private loan markets, which would provide modest interest subsidies while the student is in school, but would go to a market-rate loan once the student was in practice. Also provided would be increased availability of loan forgiveness inducements for health professionals who practice in medically underserved areas.

Expanded special projects grants would assist schools in carrying out programs designed to improve the geographic and specialty distribution of health professionals and to strengthen curriculum offerings in key areas.

A new program of grants would be established to allow states to provide service scholarship programs, "thus involving states in solving geographic distribution problems."

A new financial distress grant program would be keyed to state and local support for schools with long-term financial problems.

Schweiker said capitation grants "have served useful purposes in the past, but do not now adequately assure that institutions receiving the grants act in the national interest and thus deserve support. We are in a time in which all Americans must restrain the demands they place upon the federal budget. In these circumstances, capitation is a luxury we cannot afford."

Another policy change in the proposed legislation would phase down, over a two year period, the National Health Service Corps scholarship program to about one-third of its fiscal year 1980 level. "This program has, rather unfortunately I think, been expanded because of the demand for scholarship money for health professions students, rather than by a responsible assessment of the actual need for health professionals in nonmilitary service in 1985 and beyond," Schweiker said.

\* \* \* \*

Top House Republicans are now backing a new catastrophic national health insurance plan. House Minority Leader John Rhodes (AZ) and Rep. James Martin (NC), Chairman of the House Republican Task Force on Health Policy, say their Medical Expense Protection Act of 1980 is a two-pronged approach designed to improve health coverage under voluntary private plans and to provide catastrophic protection for all people not covered by a plan or by a public program.

A formula in the bill provides that once medical bills reach a certain percentage of income, all further expenses are automatically assumed by the program.

"Our goal is to encourage employers and the health insurance industry to provide proper coverage at reasonable costs so that the federal government can concentrate on providing coverage for those unable to obtain their own, at a minimum total cost to the taxpayer," Martin said.

Estimated first year cost of the bill was set at \$7 billion, compared to \$24 billion for President Carter's health plan, and \$50 billion for Sen. Edward Kennedy's approach.

Under the bill, private health insurance plans would be required to meet certain standards or lose their tax deductibility. The standards include minimum levels of catastrophic coverage, minimum employer premium contributions and certain types of coverage requirements.

"This approach, involving federal funds only when protection otherwise is not available, and only when expenses for a family are heavy relative to income, will entail less government intrusion and provide more benefits at lower costs than plans relying more heavily on government participation," Martin said.

Seventeen other house members have joined Rhodes and Martin in sponsoring the bill. A somewhat similar catastrophic plan is being considered by the Senate Finance Committee.

\* \* \* \*

A Federal Appeals Court has written a concluding chapter on laetrile, holding that terminally-ill patients have no constitutional right to the drug regardless of federal law.

The Supreme Court ruled last summer that dying patients are not entitled to an exemption from the government's laetrile ban, but sent the case back to the 10th Circuit Court of Appeals in Denver, CO, to consider constitutional and statutory questions.

"If the government had lost this case, the entire drug approval system of the government would have gone right out of the window," a Food and Drug Administration spokesman said.

The Appeals Court said "the decision by the patient whether to have a treatment or not is a protected right, but his selection of a particular treatment, or at least a medication, is within the



area of governmental interest in protecting public health."

Congress has the right to "limit the patient's choice of medication" through the Food and Drug laws, said the Court.

\* \* \* \*

The American Hospital Association has approved a policy statement that hospital medical staffs should set up standards for people who perform health services but are neither hospital employees or members of the medical staff.

"It is essential that the appropriateness of their service or scope of activities within the institution as well as the qualifications of these individuals be evaluated by the hospital," said the AHA during its annual meeting in Washington, D. C.

The AHA said medical staff bylaws should establish procedures for:

- determination of the general qualifications to be required of the non-staff employee practitioners and level of medical supervisions needed.
- recommendations regarding the scope of activities for each practitioner, determined on the basis of an assessment of qualifications such as educational background, licensure, certification, experience, and demonstrated current competence.
- recommendations regarding categories for appointment, performance review procedure, reappointments, disciplinary actions, and appeals procedure.

The AHA said hospital procedures should specify that the activities of the practitioners in question are to be performed in consultation with the medical staff and that they (procedures) will not be undertaken unless either (a) requested or approved by admitting or attending physicians, or (b) indicated in a protocol developed or approved by the medical staffs, and consented to by the patients.

\* \* \* \*

The Department of Health, Education and Welfare has announced a national study of the use, costs and financing of health care services in the U. S. A joint project of the National Center for Health Statistics and the Health Care Financing Administration, the study will involve 10,000 households across the country. It will produce detailed information on the amounts

and types of health care received during 1980, the costs of the services and the sources which helped to pay the bills. The information will be used to measure and monitor the effects of existing health care financing programs on health status and costs.

\* \* \* \*

A telephone-book size directory of Northern Virginia physicians, the most detailed directory of its type in the nation, has been published by the Health Systems Agency of the area. About half the practicing physicians submitted information for the directory which has a cover picture of a physician holding a stethoscope to a youngster's chest.

Five thousand copies of the 441-page directory were printed at a cost of \$25,000 to the Health Systems Agency of Northern Virginia. They will be furnished at no cost to the public. Several other Health Systems Agencies (HSAs) have also produced directories. About 36 directories of physicians have been published by various groups, including medical societies, in recent years.

The Virginia directory includes information on physicians' policies on accepting Medicaid and Medicare patients, fees for standard office visits and tests, policies on billing and insurance, office accessibility for the handicapped, and prescribing by generic name.

Information is also listed on education, certification, hospital affiliations, office hours, usual advance notice required for appointments, types of laboratory tests available in the office, foreign languages and sign language spoken by the doctor or staff, and mechanisms for handling patient inquiries and complaints about billing.

The directory presents information about the Health Maintenance Organizations providing health care services in Northern Virginia, and a summary of the services provided by area public health departments.

The medical societies in Arlington, Fairfax and Prince William counties helped participate in the project.

Publication of the directory was halted in order to challenge the constitutionality of the Virginia Medical Practices Act that had prohibited physicians from furnishing information for the directory. The statute was found to be unconstitutional in November, 1976.

# keeping up

## Category 1 Continuing Medical Education Programs Available in Arkansas

### **CHEMOTHERAPY AND IMMUNOTHERAPY FOR HEAD AND NECK CANCER**

Presented by James Suen, M.D., *June 5, 8:00 a.m. to 5:00 p.m.; June 6, 8:00 a.m. to 12:00 noon*, Camelot Inn, Little Rock. Nine hours Category I credit. Registration fee \$200 for physicians, \$125 for residents, Fellows and Nurses. Sponsored by UAMS.

### **TEEN PREGNANCY IN ARKANSAS**

Presented by Robert Arrington, M.D., Arkansas Department of Health, *June 6, 9:00 a.m. to 3:00 p.m.*, and *June 7, 9:00 a.m. to 3:00 p.m.*, In-

dian Rock Resort and Convention Center, Fairfield Bay, Arkansas. Eight hours Category I credit. Registration fee \$60. Sponsored by UAMS.

### **SECOND ANNUAL FAMILY PRACTICE INTENSIVE REVIEW COURSE**

Presented by Ben N. Saltzman, M.D., *June 27, 8:00 a.m. to 5:00 p.m.; June 28 and 29, 8:30 a.m. to 5:30 p.m.*, UAMS Campus, Education II Building. Twenty-two and one-half hours Category I credit. Registration fee \$100.

### **RECURRING EDUCATION PROGRAMS**

Unless otherwise indicated, programs are for one to one and one-half hours Category I credit.

#### **FAYETTEVILLE — AHEC-NW**

*Medicine Teaching Conference*, 7:30 a.m. each Saturday, Washington Regional Medical Center.

#### **FAYETTEVILLE — VA MEDICAL CENTER**

*Radiology Conference*, June 3rd and 18th and July 1st and 16th, 3:00 p.m., Conference Room.

*Pathology Conference*, June 10th and July 15th, 3:00 p.m., Conference Room.

*Mortality Conference*, June 12th and July 10th, 3:00 p.m., Conference Room.

*Renal Conference*, June (check for date and time).

*Endocrinology Conference*, June (check for date and time).

#### **FORT SMITH — AHEC**

*Tumor Conference*, every Tuesday, 12:00 noon, Fourth Floor Conference Room, Sparks Regional Medical Center.

#### **LITTLE ROCK — BAPTIST MEDICAL CENTER**

*Pulmonary Care Conference*, each Tuesday, 12:00 noon to 1:00 p.m., Dining Room #4.

*Central Arkansas Primary Care Conference*, second Tuesday, 7:00 p.m. to 9:00 p.m., Auditorium. Two hours Category I credit.

*Cardiopulmonary Resuscitation Course*, second Wednesday, 6:00 p.m. to 12:00 p.m., Human Resource Development Area. Six hours Category I credit.

*Emergency Room Medicine Conference*, second and fourth Wednesday, 12:00 noon to 1:00 p.m., Conference Room #1.

*Morbidity and Mortality Conference*, first Thursday, 8:00 a.m. to 9:00 a.m., Conference Room #1.

*Surgery Conference*, each Thursday except first Thursday, 8:00 a.m. to 9:00 a.m., Conference Room #1.

#### **LITTLE ROCK — ST. VINCENT INFIRMARY**

*Interhospital GI Problems Conference*, first Monday, 6:00 p.m. to 7:30 p.m., Room E155, Education Wing.

*Peripheral Vascular Disease Conference*, second Monday, 6:00 p.m. to 7:00 p.m., Room E155, Education Wing.

*Pediatric Conference*, first and third Monday, 12:30 p.m. to 1:30 p.m., Room E159, Education Wing.

*Interhospital Urology Grand Rounds*, first Monday, 5:30 p.m. to 6:30 p.m., Room E159, Education Wing.

*Neuropathy Conference*, third Tuesday, 5:00 p.m. to 6:00 p.m., Room S1169, Laboratory.

*Pulmonary Conference*, first and third Thursday, 12:00 noon to 1:00 p.m., Room E159, Education Wing.

#### **LITTLE ROCK — UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES**

*Internal Medicine Grand Rounds*, each Tuesday, 8:00 a.m. to 9:00 a.m., Education I Auditorium.

As organizations accredited for continuing medical education by the Liaison Committee on Continuing Medical Education, the organizations named certify that these continuing medical education activities meet the criteria for the credit hours specified in Category I of the Physician's Recognition Award of the American Medical Association.





## PERSONAL AND NEWS ITEMS

### **Dr. Kirby Seeks Re-Election**

Dr. H. V. Kirby of Harrison is seeking re-election as Boone County Coroner. Dr. Kirby has served in this capacity since 1963. He is a member of the International Coroners and Medical Examiners.

### **Arkadelphia Gains Physician**

Dr. James D. Russell, formerly with Workman-Rainwater Clinic in Blytheville, has joined the Arkadelphia Medical Clinic.

### **New Clinic**

Dr. David L. Gibbons has opened a new clinic at Ninth and College in Ozark. An open house was held at the clinic on March 13th.

### **Doctors' Day in Jonesboro**

March 30th was proclaimed Doctors' Day in Jonesboro by the Mayor. Members of the Craighead-Poinsett County Medical Society Auxiliary planted trees and plants in the city in honor of the day.

### **Childbirth Education**

Dr. Frank DeSandre of Springdale recently joined representatives of the Childbirth Education Association of Northwest Arkansas to speak at a public meeting at North Arkansas Community College, Harrison.

The program was to promote prepared childbirth education and family centered maternity care.

### **Dr. Dudley Named to Board**

Dr. Guilford Dudley of Newport has been named to the Board of Directors of the Jackson County National Bank.

### **Physician Candidate for Lieutenant Governor**

Dr. W. John Giller of El Dorado has announced his candidacy for the office of Lieutenant Governor of Arkansas.

Dr. Giller served as a delegate to the State Constitutional Convention. During the convention, he was chairman of the Committee on the Finance and Taxation Article.

### **Harrison Honors Physician**

A proclamation signed by Harrison's mayor named Friday, March 7, as "Dr. Ulys Jackson

Day". A plaque was presented to Dr. Jackson during a reception at the Boone County Hospital.

Dr. Jackson was honored for serving his community faithfully, cheerfully, and unselfishly.

Except for a tour with the Army during World War II, Dr. Jackson practiced in Harrison from 1934 until 1979 when his office was destroyed by an explosion at the Boone County Telephone Office Building.

During the war, he served with the 853rd Aviation Engineers Battalion of the U. S. Army in North Africa and India. Dr. Jackson was aboard the HMT Rohna when it was sunk by an aerial torpedo in the Mediterranean Sea, the second largest naval disaster in American history. After being rescued, Dr. Jackson gave medical aid to the wounded on the ship that saved him.

Dr. Jackson has been made an honorary member of the Boone County Hospital Staff. Life membership has been granted to Dr. Jackson in the Boone County Medical Society, Arkansas Medical Society, American Medical Association, American Society of Anesthesiologists, American Academy of Family Physicians and the Arkansas Academy of Family Physicians. He is an honorary member of the Arkansas Society of Anesthesiologists and has served as District Public Health Officer for Searcy, Stone and Van Buren Counties and later for Boone, Newton and Carroll Counties.

### **Physician Locates**

Dr. Tommie G. White has opened an office at 9 Laurel Plaza in Conway. Dr. White is a Family Physician.

### **Dr. Abrams Relocates**

Dr. Joe A. Abrams, formerly of Conway, has associated with Dr. Jim Weber in Jacksonville for the practice of family medicine.

### **Candidate for Re-Election**

Dr. Harold Short has announced his candidacy for re-election for Beebe City Council. Dr. Short is seeking his second term.

### **Physician Certified**

Dr. Anibal Hadad of Walnut Ridge has been certified by the American Board of Surgery.

### **Dr. Caplinger Honored**

Dr. Kelsy Caplinger of Little Rock has been named the Arkansas Democrat's Man of the Year for Arkansas for 1979. Dr. Caplinger is the founder of the Aldersgate Camps for handicapped children.

### **Physician Named to Board**

Dr. O. H. Clopton of Jonesboro has been named to St. Bernard Regional Medical Center Advisory Board.

### **Physician Addresses Students**

Dr. Ed Wheat of Springdale spoke to students at John Brown University in Siloam Springs on April 10. His subject theme was "The Family".

### **Medical Director Named**

Dr. John Miller, Camden, is the new medical director of CABUN Rural Health Services, Inc., for primary care clinics located in Hampton and Hermitage.



## **NEW MEMBERS**

### **Dr. Stan W. Burleson**

The Arkansas County Medical Society has added Dr. Stan Burleson to its membership roll.

Dr. Burleson, a native of Carlisle, was graduated from the University of Central Arkansas with a B.S. degree in 1973. In May 1978, he received his M.D. degree from the University of Arkansas College of Medicine. His internship was with the AHEC program at Jefferson Memorial Hospital in Pine Bluff.

Dr. Burleson is in Family Practice at the DeWitt Medical Arts Building, DeWitt.

Baxter County Medical Society has added two to its membership roll.

### **Dr. Daniel P. Chock**

Dr. Chock is a native of Medan, Sumatra. He received his B.S. degree in 1961 from Hamlin University and an M.S.P.H. in 1963 at the University of North Carolina, School of Public Health. His medical degree was earned at the University of Heidelberg, Germany, in 1969.

An internship and residency at St. Francis Hospital, Evanston, Illinois, preceded a two-year Fellowship in Nephrology/Hypertension at the

Northwestern University Medical School in the same city.

Dr. Chock is a member of the American Society of Nephrology and the International Society of Nephrology.

He practices Internal Medicine and Nephrology/Hypertension at 503 South College, Mountain Home.

### **Dr. Helga E. Chock**

A native of Berlin, Germany, Dr. Helga Chock was graduated from the University of Tuebingen, West Germany, with a M.D. degree in 1966.

Dr. Chock's internship and residency were at the Presbyterian St. Luke Medical Center, Chicago. She served a Fellowship in Pediatric Hematology and Oncology at the same institution and Children's Memorial Hospital.

Her practice, located at 503 South College in Mountain Home, consists of Pediatrics and Pediatric Hematology and Oncology. Dr. Chock is board certified.

### **Dr. Alfred R. Addington**

Dr. A. R. Addington has been added to the membership roll of Benton County Medical Society. He was born in Tyler, Texas.

After receiving a B.S. in Zoology at the University of Arkansas, Dr. Addington attended the University of Texas Medical Branch in Galveston. He received his medical degree in 1975.

Dr. Addington served his internship at Baylor College of Medicine, Houston. His residency was at St. Joseph Hospital, (a University of Texas affiliate). He is a Junior Fellow of the American College of Obstetrics and Gynecology.

Dr. Addington practices at 1116 Poplar Place, Rogers.



**Dr. Lander A. Smith**

Faulkner County Medical Society has added Dr. Lander Smith to its membership roll.

A native of Camden, Dr. Smith was graduated with a B.S. from Southern Arkansas University in 1974. His M.D. degree was attained at the University of Arkansas College of Medicine.

After an internship at University Hospital in Little Rock, he joined Banister-Lieblong Clinic, 923 Parkway Street, in Conway.

Dr. Smith is in General Practice.

The Garland County Medical Society has added two new members to its roll.

**Dr. Richard W. Dunn**

Dr. Richard Dunn, born in Camden, received a B.S. degree from Arkansas A & M and a M.S. degree from the University of Arkansas at Fayetteville. His medical degree was received from the University of Arkansas College of Medicine in 1974.

Dr. Dunn served a Straight Medicine Internship, an Internal Medicine Residency and a Fellowship in Gastroenterology at the University of Arkansas College of Medicine.

He is an Instructor in Medicine at the University of Arkansas College of Medicine.

Dr. Dunn is in the practice of Gastroenterology at 236 Central #405, Hot Springs. He is Board Certified in Internal Medicine and Gastroenterology.

**Dr. Patrick L. Knight**

Dr. Patrick Knight is a native of Hot Springs. He attended the University of Arkansas at Little Rock and received his medical degree from the College of Medicine in 1964. An internship and residency were served at the same institution.

He served a two-year tour with the United States Air Force stationed at U.S.A.F. Medical Center Keesler, Keesler Air Force Base, Mississippi.

Dr. Knight previously practiced in Hot Springs and Houston, Texas. He has returned to Hot Springs to practice General Internal Medicine at 600 Main.

Dr. Knight is Board Certified by the American Board of Pathology.

**Dr. Ramon E. Lopez**

Dr. Ramon E. Lopez has joined the Jackson County Medical Society. Dr. Lopez was born in Puerto Rico. He attended the University of

Puerto Rico, Rio Piedras, for his pre-med education. In 1954 he was graduated from the University of Puerto Rico School of Medicine, San Juan.

From July 1958 to December 1970, he served with the United States Army. During his tour of duty, he served a rotating internship at the William Beaumont General Hospital in El Paso and a pre-specialty General Surgical residency at the U. S. Army Hospital, Fort Hood, Texas.

He returned to William Beaumont General Hospital as a member of the Adult Orthopaedics and Trauma staff. Dr. Lopez's tour of duty also included the Carrie Tringley Hospital for Crippled Children in Truth or Consequences, New Mexico, as a member of Orthopaedics staff; a military staff course at Fort Leavenworth, Kansas; Chief of Surgery, Chief of Orthopaedics, Chief of Professional Services and Hospital Commander at the 121st Evacuation Hospital, Ascom City, Korea; and Chief, Orthopaedic Service, at U. S. Darnall Army Hospital, Fort Hood.

After leaving the Army, Dr. Lopez practiced at the Freeport Clinic, S. C., Freeport, Illinois (an affiliate of Freeport Memorial Hospital).

Dr. Lopez is a Board Certified Orthopaedic Surgeon. His practice is at 1205 McLain, Newport.

**Dr. David M. Ramsey, III**

Dr. David Ramsey, III, a native of Aiken, South Carolina, has become a member of the Jefferson County Medical Society.

After graduating from Florida State University, he received his medical degree from the University of Florida College of Medicine in 1976. A flexible internship at Gorgas Hospital in the Canal Zone preceded Dr. Ramsey's residency in Family Practice at the University of Florida.

Dr. Ramsey is an Assistant Professor of Family Medicine with the AHEC program at 1310 Cherry Street in Pine Bluff. He is certified by the American Academy of Family Physicians.

Two members have been added to the Lonoke County Medical Society.

**Dr. Thomas R. Braswell**

A native of Little Rock, Dr. Thomas R. Braswell was graduated from the University of Central Arkansas with a Bachelor of Science in 1974. In 1978, he received his medical degree from the University of Arkansas College of Medicine. His internship in General Practice was at Jefferson County Memorial Hospital, Pine Bluff.

Dr. Braswell's practice is at 520 Northeast Fourth, England.

**Dr. Ahmad Zia Shefa**

Dr. Shefa was born in Kabul, Afghanistan. His pre-med education was at Faculty of Science in Kabul; his medical degree was attained at the Faculty of Medicine, Kabul University, in 1971.

He served an internship at St. Paul Hospital in Dallas and a residency at Methodist Hospital in that city.

Dr. Shefa previously practiced in Des Arc with the National Health Corps and in Altheimer.

He is now in General Practice at Shefa Medical Clinic, Lonoke.

Mississippi County Medical Society has had two new members to join.

**Dr. Kenneth D. Sellers**

Dr. Kenneth Sellers is a native of Ironton, Missouri, and a graduate of the University of Missouri. His medical degree from the University of Tennessee College of Medicine was received in 1968.

Dr. Sellers served his internship at City of Memphis Hospital and a residency at the University of Tennessee Center for Health Sciences. From 1975 to 1979, he was an Assistant Professor of Surgery at the University of Tennessee.

Dr. Sellers has a practice of General Surgery at Tenth and Highland in Blytheville. He is Board Certified and is a Fellow of the American College of Surgeons, and a member of the Southeastern Surgical Congress.

**Dr. Joseph V. Jones**

A native of Shelbyville, Illinois, Dr. Joseph Jones received a B.S. in Pharmacy at the St. Louis College of Pharmacy. In 1976, Dr. Jones received his M.D. from the St. Louis University School of Medicine. His internship and residency were served at the same institution.

Dr. Jones, a Board Certified Internist, is associated with Rainwater-Workman Clinic, 527 North Sixth Street, in Blytheville.

**Dr. Robert T. Miya**

Dr. Robert Miya has joined the Monroe County Medical Society. He was born in Vancouver, British Columbia, Canada.

In 1948, Dr. Miya was graduated from the University of Toronto — Premedical School. He was granted his M.D. degree in 1952 from the University of Toronto Faculty of Medicine. An in-

ternship at the University of Alberta Hospital, Edmonton, Alberta, Canada, followed.

Dr. Miya served as medical officer with the Royal Canadian Navy from 1953 to 1957.

Before moving to Brinkley in 1979, he was in General Practice in Hamilton, Ontario, Canada.

Dr. Miya is located at 106 North New York, Brinkley.

**Dr. Anh N. Pham**

A new member of the Phillips County Medical Society, Dr. Anh N. Pham is a native of Vietnam.

Dr. Pham's pre-med education was at Faculty of Sciences (Saigon University). After attending Saigon Medical School and the University of Arkansas College of Medicine, he received his M.D. in 1978. His internship was at the University of Arkansas College of Medicine.

Dr. Pham is in General Practice in Marvell.

Pulaski County Medical Society has added six new members to its roll:

**Dr. Anthony R. Giglia, III**

Dr. Giglia, a native of Escanaba, Michigan, is a graduate of Xavier University, Cincinnati, Ohio. His medical degree was received from the University of Louisville School of Medicine, Kentucky.

His internship and residency in Internal Medicine were at Blodgett Memorial Hospital in Grand Rapids, Michigan. He was a Clinical Instructor at Michigan State College of Human Medicine.

In 1977, Dr. Giglia moved to Little Rock for a residency in Pulmonary Medicine at the Veterans Administration Hospital and the University of Arkansas College of Medicine. He is now associated with Pulmonary Associates, Inc., at 500 South University.

Dr. Giglia is Board Certified by the American Board of Internal Medicine and a member of the American College of Physicians.

**Dr. Ronald D. Hardin**

Dr. Ronald Hardin was born in Rector, Arkansas. A graduate of Arkansas State University in Jonesboro, he attended the University of Arkansas College of Medicine and received his M.D. in 1974. His internship was served at University Hospital and Little Rock Veteran Administration Medical Center. An Internal Medicine residency at University Hospital was followed by a Fellowship in Gastroenterology at the same institution.



Dr. Hardin is on the teaching staff of University Hospital and Little Rock VA Medical Center. He is certified by the American Board of Internal Medicine and has taken the certification exam for Gastroenterology.

Dr. Hardin practices Gastroenterology in Suite 203, 8500 Markham, Little Rock.

**Dr. Garry Jones**

A graduate of Ouachita Baptist College in Arkadelphia, Dr. Garry Jones is a native of Brownsville, Tennessee. Dr. Jones received his medical degree from the University of Arkansas College of Medicine in 1968.

He served an internship at St. John Hospital in Tulsa, Oklahoma, and an Anesthesiology residency at the United States Naval Hospital in San Diego, California.

A Board Certified Anesthesiologist, Dr. Jones is in private practice with offices in Suite 720 of the Doctors Building, 500 South University, Little Rock.

**Dr. Robert W. Lehmberg**

A native of Taylor, Texas, Dr. Robert Lehmberg attended the University of Texas in Austin and the University of Texas Medical Branch in Galveston. He received his medical degree in 1973.

At Baylor College of Medicine, Dr. Lehmberg served General Surgery and Plastic Surgery residencies. A fellowship in Hand Surgery at the University of Colorado Medical Center in Denver followed.

Dr. Lehmberg practices Plastic Surgery at 919 University Towers, Little Rock.

**Dr. Fayyaz Mirza**

Dr. Mirza is a native of Pakistan and a graduate of the Government College, Lahore, Pakistan. He received his M.D. in 1973 from King Edward Medical College, Lahore, Pakistan. An internship at Helene Fuld Medical Center in Trenton, New Jersey, preceded his residency in Radiology at the University of Arkansas College of Medicine.

Dr. Mirza is an Instructor with the Radiology Department at the University of Arkansas College of Medicine. He is certified by the American Board of Radiology.

**Dr. Bill L. Trantum**

A native of Wilson, Arkansas, and graduate of the University of Arkansas at Fayetteville, Dr. Bill Trantum received his medical degree from the University of Tennessee College of Medicine in 1963.

Dr. Trantum served an internship at the City of Memphis Hospital. He served two years with the United States Air Force. In 1967, he entered an Internal Medicine residency at the University of Arkansas College of Medicine. He was a fellow in Hematology/Oncology at the same institution. Dr. Trantum is board certified.

From October 1970 to April 1978, he was a faculty member at the University of Arkansas. He was an Associate Professor of Medicine.

Dr. Trantum is practicing Medical Oncology at 500 South University, Suite 704. He is also an Associate Clinical Professor of Medicine with the University of Arkansas.

Two members have been added to the Randolph County Medical Society membership roll.

**Dr. Danny B. Holt**

Dr. Danny Holt is a native of Arkansas, born in Walnut Ridge. He received a B.S. in 1970 from Arkansas State University.

From July 1970 to February 1972, he served with the United States Army.

After receiving an M.S. from Arkansas State University in 1974, Dr. Holt attended the University of Arkansas College of Medicine. He was granted an M.D. in 1978. Dr. Holt's internship was with the Pensacola Educational Program, Pensacola, Florida.

Dr. Holt now practices Family Medicine at 110 West Broadway in Pocahontas.

**Dr. Andrew Jansen**

Dr. Jansen is a graduate of Arkansas State University. He received his medical degree from the University of Arkansas College of Medicine in 1976.

His residency in Family Practice was at the same institution. In 1979, he was Chief Resident of the Department of Family Practice.

Dr. Jansen is in the practice of Family Medicine at 110 West Broadway in Pocahontas. He is Board Certified in his specialty.

Sebastian County Medical Society has added three new members to its roll.

**Dr. David A. Albers**

Dr. David Albers was born in Flint, Michigan. After receiving his M.S. in 1968 at St. John's University in Collegeville, Minnesota, he attended the University of Minnesota School of Medicine in Duluth. In 1971, he was granted his medical degree.

Dr. Albers served eight years with the United

States Army. During this time, he served a Rotating Internship and Diagnostic Radiology Residency at Tripler Army Medical Center in Honolulu, Hawaii, and a Fellowship in Nuclear Medicine at William Beaumont Army Medical Center in El Paso, Texas. While in El Paso, he was Chief of the Diagnostic Radiology Department and Assistant Chief of Nuclear Medicine.

From December 1978 to July 1979, he was an Assistant Clinical Professor with the Department of Radiology at Texas Tech University Health Sciences Center, School of Medicine in Lubbock.

Dr. Albers now practices Diagnostic Radiology/Nuclear Medicine with Holt-Krock Clinic at 1500 Dodson Avenue in Fort Smith.

**Dr. Richard S. Brown**

Dr. Richard Brown, a native of Dallas, Texas, was graduated from Tulane University with a B.S. degree in 1969. He received his M.D. from the University of Texas Medical Branch at Galveston in 1973. An internship at Baylor University Medical Center in Dallas preceded Dr. Brown's residency at Charity Hospital in New Orleans, a division of Louisiana State University.

Before moving to Fort Smith, he practiced for eighteen months in Slidell, Louisiana.

Dr. Brown, a Board Certified Surgeon, is now practicing with Cooper Clinic, Waldron Road at Ellsworth, in Fort Smith.

**Dr. Everett C. Moulton, III**

Dr. Moulton was born in Boston, Massachusetts. He was graduated from the University of Kansas with a B.A. in 1973 and from the University of Arkansas College of Medicine with a M.D. in 1975.

His internship was served at St. Luke Hospital in Kansas City, Missouri. An Ophthalmology residency was at the University of Kansas Medical Center in Kansas City, Kansas.

Dr. Moulton has joined Ophthalmology Clinic at 3000 Rogers Avenue in Fort Smith, where he is associated with his father, Dr. E. C. Moulton, Jr., and Drs. McEwen, Hughes, Wallace, and Felker. Dr. Moulton's grandfather was also an Ophthalmologist who practiced in Fort Smith.

**Dr. Terry G. Green**

Dr. Terry Green has joined the White County Medical Society. He is a native of DeWitt, Arkansas.

In 1969, he was graduated from the University of Arkansas at Little Rock with a Bachelor of

Science and received his medical degree from the College of Medicine in 1972. He served an internship at Baylor University Medical Center in Dallas.

He practiced at Dardanelle Clinic from 1973 to 1974 and with Clarksville Medical Group from 1975 to 1976. In 1976, he returned to the University of Arkansas College of Medicine for a residency in Orthopaedic Surgery.

He now is at 910 East Race in Searcy in the practice of Orthopaedic Surgery.



## RESOLUTIONS



**Dr. H. Ray Fulmer**

WHEREAS, the members of the Pulaski County Medical Society are deeply saddened by the recent death of our colleague, H. Ray Fulmer, M.D., and

WHEREAS, he had been a devoted member of the Society for thirty-two years, during which time he gave unselfishly of his time to the betterment of the organization, and

WHEREAS, Dr. Fulmer was recognized for his service to his patients, to the profession and to the community;

BE IT THEREFORE RESOLVED:

THAT, this resolution become a part of the permanent archives of this Society, and

THAT, a copy be sent to the family of Dr. Fulmer as a token of our sincere sympathy and appreciation for his life, and

THAT, a copy be forwarded to the Journal of the Arkansas Medical Society for publication.

By Direction of the Memorials Committee: T. Duell Brown, M.D., Chairman; Henry Hollenberg, M.D.; Robert Watson, M.D.

Adopted: Executive Committee, Pulaski County Medical Society, March 19, 1980.

**Dr. Julian L. Foster**

WHEREAS, the recent death of our colleague and leader, Dr. Julian L. Foster, causes the members of the Pulaski County Medical Society to feel a great sense of loss, and

WHEREAS, Dr. Foster has contributed of his time and energy to the betterment of the Society



for many years having risen to the Presidency at the time of his death; and

WHEREAS, his reputation of deep concern for the welfare of his patients, his profession and his community has been immeasurable:

BE IT THEREFORE RESOLVED:

THAT, This Society approve the adoption of this resolution for the permanent archives of the Society as an expression of appreciation for his contributions to the organization; and

THAT, A copy of this resolution be forwarded to Dr. Foster's family as evidence of our deepest sympathy; and

THAT, A copy of this resolution be sent to the Journal of the Arkansas Medical Society for publication.

By Direction of the Memorials Committee: T. Duel Brown, M.D., Chairman; Henry Hollenberg, M.D.; Robert Watson, M.D.

Adopted: Executive Committee, Pulaski County Medical Society, March 19, 1980.

**Mr. Eugene R. Warren**

WHEREAS, the members of the Pulaski Coun-

ty Medical Society note with sincere sorrow the recent death of a valued friend, Eugene R. Warren; and

WHEREAS, Mr. Warren's devoted service to the medical profession of the State of Arkansas for many years cannot be measured; and

WHEREAS, his personal friendship and his professional ability brought comfort and a sense of security in the knowledge that their legal concerns were trusted to his guidance.

BE IT THEREFORE RESOLVED:

THAT, this resolution be made a part of the permanent records of this Society; and

THAT, a copy of this resolution be forwarded to Mr. Warren's family as an expression of our sincere sympathy; and

THAT, a copy be made available to the Journal of the Arkansas Medical Society for publication.

By Order of the Memorials Committee: T. Duel Brown, M.D., Chairman; Henry Hollenberg, M.D.; Robert Watson, M.D.

Approved: Executive Committee, Pulaski County Medical Society, March 19, 1980.



## OBITUARY

### **Dr. Ross Van Pelt**

Dr. Ross Van Pelt of Eureka Springs died on March 14, 1980. He was born August 15, 1895, in State Center, Iowa.

Dr. Van Pelt was awarded his M.D. from the University of Illinois Medical School in 1922, and served his internship at St. Joseph Hospital in Chicago. He practiced medicine for twenty-five years in Chicago. In 1946, he moved to Eureka Springs. Dr. Van Pelt built the first hospital for Carroll County in Eureka Springs. He retired from practice in 1969.

Dr. Van Pelt is survived by his wife, Dr. Irma Van Pelt, a daughter, and a son, Dr. William Van Pelt of Tulsa.

### **Mr. Eugene R. Warren**

Mr. Eugene R. Warren of Little Rock, legal counsel for the Arkansas Medical Society, died March 16, 1980. He was born September 29, 1910, in Forrest City. His law degree was received from

the University of Arkansas, Fayetteville, in 1933.

Before entering the United States Navy as a gunnery officer during World War II, Mr. Warren was in private practice with the firm Robinson, House and Warren. His later partnerships included the firms Bailey and Warren and Warren and Bullion. At the time of his death, Mr. Warren was senior counsel with Cearley, Gitchel, Bogard, Mitchell, and Bryant, P.A. He was legal counsel for the Arkansas State Medical Board, the Arkansas Education Association, and the Arkansas State Pharmacy Board, as well as the Society.

Mr. Warren served as the first president of the Arkansas Junior Bar Association and was a member of the Arkansas and American Bar Associations, the American Law Institute, American Medical Association, Arkansas Education Association, National Health Lawyers Association, American Society of Law and Medicine, National Association of Teacher Attorneys, and the National Association on Legal Problems of Education. He served on the Board of Directors of Pulaski Bank and Trust Company of which he was a founder and was past president of the Episcopal Churchmen of Arkansas.

Mr. Warren is survived by his wife, Mrs. Betty Selph Warren, a daughter and a stepdaughter.

# INDEX

## JOURNAL OF THE ARKANSAS MEDICAL SOCIETY

Volume 76

June, 1979 — May, 1980

(O) Original Article; (SP) Special Article; (OB) Obituary;  
(R) Resolution; (E) Editorial.

### — A —

Abernathy, Robert S. (SP) 55  
Act 817 of 1979: Arkansas' New Involuntary Commitment Law (O) 457  
Alcohol and Minor Traquilizer Intake, Withdrawal Symptoms from Combined (O) 232  
Ambulance Service Reimbursement (R) 16  
American Medical Association Annual Convention, Report of (SP) 183  
American Medical Association Interim Convention, Report of (SP) 373  
Ankle, X-ray Diagnosis of the Sprained (SP) 63  
Annual Meeting Program, Arkansas Medical Society (SP) 421  
Antibiotic Resistance in Arkansas, Monitoring (SP) 502  
Antimicrobial Therapy, Prophylaxis of Infection with (SP) 55  
Aortic Insufficiency, Acute (SP) 137  
Arkansas Cervical Cancer Program (SP) 312  
Arkansas Medical Society Auxiliary Convention Report (SP) 42  
Arkansas Medical Society Constitution and By-Laws, Proposed Amendment to (SP) 436, 442  
Arkansas Medical Society Membership Roster, December 1, 1979 (SP) 283  
Arkansas Medical Society, Report on Winter Meeting of the (SP) 343  
Arkansas Public Health at a Glance (SP) 67, 106, 177, 240, 263, 404  
Artery Disease, Extracranial Carotid (SP) 323  
Asthma, Management of Childhood (SP) 474  
Averaged Electroencephalic Response (AER), Clinical Application of the Auditory (O) 229

### — B —

Barbour, G. (O) 125  
Bariatric Practice, The Use of Anorectic Controlled Drugs in (O) 70  
Barium Enema, Preparing the Colon for — Why All the Fuss (O) 87  
Beard, Owen W. (SP) 323  
Becton, Paul (SP) 312  
Beverly, Nolan F. (OB) 413 (R) 417  
Bishop, Terrell (O) 197  
Bissett, Joe K. (SP) 137  
Black, Millard W. (OB) 123  
Blackshear, Jack L. (O) 351  
Blood Pressure, More on High (E) 179  
Bornhofen, John H. (SP) 209  
Brain, The (E) 72  
Brown, Douglas A. (O) 491  
Burkhalter, L. (SP) 263  
Busby, David (O) 353

### — C —

Cain, Thomas D. (SP) 323

Cancer Program, Arkansas Cervical (SP) 312  
Carcinoma of the Colon, Epidemiology of — With Remarks on the Cause, Prevention, and Early Detection (O) 93  
Carter, William J. (SP) 169  
Casali, R. E. (O) 125  
Chemotherapy for Tuberculosis, Short-Course (SP) 240  
China Window, Through A (E) 269  
Cholangiopancreatography, Current Uses of Endoscopic Retrograde (O) 351  
Clark, K. S. (SP) 381  
Clinic, Characteristics of Continuing and Noncontinuing Patients in a Teenage Contraceptive (O) 453  
Clinton, Ray (SP) 177  
Collier, Steven (SP) 312  
Committee Reports, Annual (SP) 436  
Committees of the Arkansas Medical Society, 1979-80 (SP) 36  
Controlled Substances Act: Physician Alert (SP) 104  
Council of the Arkansas Medical Society, Minutes of the (SP) 25, 185, 275, 344, 447  
Council, Report of the (SP) 444  
Council, Supplemental Report of the (Organizational Study Committee) (SP) 16  
Councilors of the Arkansas Medical Society (SP) 33, 117  
Cyanosis in the Newborn, An Approach to (SP) 365

### — D —

Diabetes Mellitus Secondary to Diphenylhydantoin Intoxication, Transient (SP) 209  
Digoxin Antibodies, A Remedy for Life Threatening Digitalis Toxicity (SP) 111  
Diner, Wilma C. (O) 87  
Diuretic Action, Physiological Basis for (SP) 98  
Dodson, C. Frank, Jr. (SP) 261  
Doherty, James E. (SP) 137  
Doyle, L. L. (O) 453  
Dungan, W. T. (SP) 365  
Dutt, Asim K. (SP) 240

### — E —

Ectopia Cordis (SP) 78  
Elders, M. Joycelyn (SP) 209, 263  
Endorphins (E) 242  
Endoscopic Retrograde Cholangiopancreatography, Current Uses of (O) 351  
Epidemiology of Carcinoma of the Colon — With Remarks on the Cause, Prevention, and Early Detection (O) 93  
Euler, Arthur R. (O) 164  
Extracranial Carotid Artery Disease (SP) 323  
Eisenach, Kathy D. (SP) 502

### — F —

Faas, Fred H. (SP) 169  
Faulkner, Larry R. (O) 457  
Felty's Syndrome (O) 195  
Fields, Branch T., Jr. (SP) 55  
Fiser, Paul Martin (SP) 235, 474  
Fiser, Robert H., Jr. (SP) 209, 263  
Forefoot Disorders, Office Management of Common (SP) 471



## INDEX

Foster, Julian Lee (OB) 489 (R) 517  
 Fracture Healing (SP) 399  
 Fractures at the Knee and Ankle, Growth Plate (SP) 211  
 Fractures, Painful Non-Union of Lateral Malleolus (SP) 332  
 France, Gene L. (SP) 335  
 Franken, Robert (O) 232  
 Fraunfelder, F. T. (O) 159  
 From Other Years (SP) 506  
 Fulmer, H. Ray (OB) 490 (R) 517  
 Fulton, William L. (OB) 281 (R) 349

### — G —

Glaucoma, Angle-Closure: An Eye Disease Which May Resemble Other Illnesses (O) 47  
 Golladay, E. S. (SP) 405 (O) 494  
 Gordon, Vida H. (O) 49  
 Gradus, M. Stephen (O) 95  
 Grimes, H. Austin (SP) 211, 471  
 Growth Plate Fractures at the Knee and Ankle (SP) 211

### — H —

Hairston, Max G. (SP) 312  
 Hammett, Wilma N. (SP) 312  
 Hand Problem, Trigger Finger, A Common (O) 388  
 Haut, Arthur (O) 491  
 Hearing and Vision Screening — Referrals, School (SP) 177  
 Henker, Fred O. (O) 491  
 Henry, Morris M. (O) 47  
 Hepatitis, Non-A, Non-B (E) 338  
 Hepatitis Research, Frontiers in (SP) 464  
 Hernia, Congenital Inguinal — Management of the Contralateral Side (O) 494  
 Hestir, John M. (SP) 117  
 Hightower, Michael D. (SP) 464  
 Hiller, F. Charles (SP) 391  
 Honeycutt, Wesley Mage (OB) 281 (R) 349  
 Hormone Receptors (E) 367  
 Hormones, Gastro-Intestinal (E) 505  
 House of Delegates, Business Affairs (SP) 1, 18, 436  
 House of Delegates, Minutes (SP) 345  
 Hylton, Sue (SP) 312  
 Hypothyroid Screening Program, Evaluation of the Arkansas Neonatal (SP) 263

### — I —

Immune Deficiency, Management of the Patient with Suspect (SP) 235  
 Injury, The Nail-Gun/Staple-Gun (SP) 361  
 Ivey, Robert G. (O) 229

### — J —

Jacobs, Richard F. (SP) 502  
 Jansen, G. Thomas (SP) 377  
 Jaundice, Improved Survival with Aggressive Treatment of Neonatal (SP) 405  
 Jimenez, Jorge F. (O) 164  
 Johnson, Philip H. (SP) 142, 399  
 Jones, Kenneth G. (SP) 237, 497  
 Jouett, Ray (O) 130, 478

### — K —

Kahn, Alfred, Jr. (E) 72, 110, 148, 179, 218, 242, 269, 338, 367, 412, 505

Kaylor, Coy (SP) 78  
 Kenney, Jane A. (SP) 312  
 Klugh, Walter G., Sr. (OB) 158  
 Knee Injuries, Evaluation of Acute (SP) 103  
 Kohler, Peter O. (SP) 169  
 Kutait, Kemal (O) 353

### — L —

Lambert, John (O) 494  
 Landers, James H. (O) 159  
 Leukemia Remission — Effect on Psychic Adjustment (O) 491  
 Lewis, R. B. (O) 195  
 Liability Premiums, Equitable Risk Classifications in Medical (R) 16  
 Lipsmeyer, Eleanor A. (SP) 203  
 Lucas, Edgar A. (SP) 391

### — M —

MacLeod, Veronica (SP) 209  
 Mains, Phillip J. (SP) 106  
 Malleolus Fractures, Painful Non-Union of Lateral (SP) 332  
 Mangold, William D. (O) 254  
 Mann, R. Jerry (SP) 117  
 Marsh, Sandra (SP) 312  
 Medical Education Foundation (SP) 78  
 Medical Grand Rounds (SP) 55, 98, 137, 169, 203, 323, 391, 464  
 Megalodactylism — Macroductylism — Local Giantism of Digits (SP) 237  
 Mendelsohn, E. A. (OB) 380 (R) 380  
 Meningitis, The Tryptophan Test as a Rapid Aid in the Presumptive Diagnosis of Tuberculous — Review of an Old Test (O) 95  
 Meningoencephalitis in Arkansas, Amebic (O) 164  
 Millard, I. Leighton (SP) 332  
 Monoclonal Gammopathies (E) 412  
 Monson, Thomas P. (SP) 55  
 Morgan, C. (SP) 263  
 Murphy, Marvin L. (SP) 137  
 Myasthenia Gravis and Immunity (E) 148  
 Myocardial Infarction (E) 218  
 Myxedema and the Heart (SP) 169

### — Mc —

McChesney, Thomas C. (SP) 67  
 McCurry, John Henry (OB) 123  
 McKee, Tom W. (O) 164

### — N —

Nail-Gun/Staple-Gun Injury, The (SP) 361  
 Nasca, Richard J. (O) 388  
 Nash, Donna (SP) 405  
 National Registry of Drug-Induced Ocular Side Effects and Toxic Drug Effects on the Retina (O) 159  
 Neonatal Jaundice, Improved Survival with Aggressive Treatment of (SP) 405  
 Neonatal Mortality in the 1974 Arkansas Live Birth Cohort (O) 254  
 Nestrud, Richard M. (O) 106  
 Nestrud, T. (O) 453  
 Newborn, An Approach to Cyanosis in the (SP) 365  
 Newborn Transport, Arkansas: Saving Lives (SP) 106  
 Nicholson, David P. (O) 249

# INDEX

Nixon, Ewing M. (R) 85  
 Nolan, Charles M. (SP) 55  
 Norris, R. O. (OB) 380  
 Norton, J. B. (SP) 365

## — O —

Office Orthopaedics (SP) 63, 103, 142, 211, 237, 261, 332, 361, 399, 471, 497  
 Officers of Arkansas Medical Society 1979-80 (SP) 33  
 Officers of County Medical Societies 1979 (SP) 34  
 Oil Warfare and the Physician — The Matter of Priorities (E) 110  
 Ophthalmology Head Appointed (SP) 222  
 Overdose Patient, Care of the (O) 249

## — P —

Patellae, Chondromalacia (SP) 142  
 Patterson, R. (O) 125  
 Pediatric Department History, University of Arkansas College of Medicine 1904-1978 (O) 49  
 Pediatric Review (SP) 209, 235, 335, 365, 405, 474, 502  
 Pehrson, Nils C. (R) 85  
 Peterson, Norman E. (O) 383  
 Phillips, Don (O) 70, 404  
 Phillips, James R. (SP) 391  
 Physician, Oil Warfare and the — The Matter of Priorities (E) 110  
 Practitioners and Arkansas, New Health (O) 353  
 President's Address (SP) 4  
 President's Inaugural Address (SP) 32  
 Principles of Medical Ethics, Federal Trade Commission's Ruling on (SP) 341, 371  
 Problem, The Nature of the — and State of the Art (SP) 497  
 Proceedings of the 103rd Annual Session of the Arkansas Medical Society (SP) 1  
 Prophylaxis of Infection with Antimicrobial Therapy (SP) 55  
 Puschett, Jules B. (SP) 98

## — R —

Rabies Epidemic in Arkansas, Skunk (SP) 67  
 Rastogi, S. (O) 125  
 Readinger, R. (SP) 365  
 Receptors, Hormone (E) 367  
 Renal Transplantation: An Update (O) 125  
 Retina, The National Registry of Drug-Induced Ocular Side Effects and Toxic Drug Effects on the (O) 159  
 Ritchie, Elmer J. (OB) 85 (R) 123  
 Roman-Lopez, Juan (SP) 312

## — S —

Salmonellosis in Infants in Arkansas (SP) 335  
 Sanders, Louis L. (SP) 169  
 Schedewie, Heinrich K. (SP) 209, 263  
 Schizophrenia, Case History of Acute (O) 197  
 Schultz, Sam L. (SP) 263  
 Scoliosis — Update (SP) 261  
 Scovil, James A. (SP) 137  
 Seale, F. E. (O) 232  
 Sebastian County Resolution Regarding Ambulance Service Reimbursement (R) 16  
 Sebastian County Resolution Regarding Mid-Winter Meeting (R) 436  
 Selman, L. (O) 453

Seyed, S. (SP) 263  
 Shock, John P., Appointed Ophthalmology Head (SP) 222  
 Shuffield, H. Elvin (R) 79  
 Skunk Rabies Epidemic in Arkansas (SP) 67  
 Slater, John G., Jr. (SP) 103  
 Sleep Apnea Syndrome (SP) 391  
 Smith, Purcell, Jr. (SP) 183, 373  
 Sorrells, R. Barry (SP) 63, 361  
 Sport Safety, Shared Responsibility for — A Statement of the NCAA Committee on Competitive Safeguards and Medical Aspects of Sports (SP) 381  
 Stansell, Phyllis E. (SP) 209  
 Stead, William W. (SP) 240  
 Steele, Russell W. (SP) 235, 335  
 Steinkamp, Ruth (SP) 312  
 Stevenson, Dick (SP) 405  
 Stroke Problem, The (O) 130  
 Stroke Problem Revisited, The (O) 478  
 Stroud, Paul T. (OB) 158

## — T —

Talbot, George B. (OB) 413 (R) 482  
 Teenage Contraceptive Clinic, Characteristics of Continuing and Noncontinuing Patients in a (O) 453  
 Texer, E. Clinton, Jr. (O) 93 (SP) 464  
 Thompson, A. J. (SP) 137  
 Thompson, John P. (OB) 413  
 Tranquilizer Intake, Withdrawal Symptoms from Combined Alcohol and Minor (O) 232  
 Trigger Finger — A Common Hand Problem (O) 388  
 Tryptophan Test as a Rapid Aid in the Presumptive Diagnosis for Tuberculous Meningitis, Review of an Old Test (O) 95  
 Tuberculosis, Resolution from the Sub-Committee on (R) 439  
 Tuberculosis, Short Course Chemotherapy for (SP) 240

## — U —

University of Arkansas College of Medicine 1904-1978, Pediatric Department History (O) 49  
 University of Arkansas for Medical Sciences Campus Progress Report — Entering the Eighties (O) 309  
 Urology, What's New — and Useful — in (O) 383

## — V —

Van Pelt, Ross (OB) 518  
 Vasculitis (SP) 203  
 Vesely, David L. (SP) 169  
 Vision Screening — Referrals, School Hearing and (SP) 177

## — W —

Ward, Harry P. (O) 309  
 Warren, Eugene R. (OB) 518 (R) 518  
 Westbrook, K. (O) 125  
 Wewers, Mark D. (SP) 391  
 White, H. B. (OB) 490  
 White, Paul C., Jr. (SP) 67 (O) 164  
 Wilkins, Charles F., Resolution on Equitable Risk Classification in Medical Liability Premiums (R) 16  
 Wilson, R. Sloan (O) 159  
 Withdrawal Symptoms from Combined Alcohol and Minor Tranquilizer Intake (O) 232  
 Wood, James S. (SP) 323

## — Y —

Yamauchi, Terry (O) 164 (SP) 502



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